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MACFADDEN'S ENCYCLOPEDIA
OF PHYSICAL CULTURE

VOLUME III

**This Volume is devoted to rational methods
of Treatment of Physical Disorders**

e Index of Contents appears at close of Volume V

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CHAPTER I.

FASTING AS A CURATIVE MEASURE.

IT is doubtful whether any question connected with the regaining or maintaining of health has aroused so much interest and attention during the past few years as has the subject of fasting. It has been discussed *pro* and *con*, enthusiastically presented and endorsed, and as vigorously abused and condemned. As a rule, medical experts have said little or nothing in its favor, and even those passages in medical works which might possibly be construed into favorable comment, have been explained away or whittled down so that they could no longer give comfort to the believers in the doctrine. Even hygienists of repute who have largely broken away from many medical traditions have bitterly assailed fasting, pronouncing it dangerous and unnatural. On the other hand its advocates have become more strenuous and emphatic in its defense, and, if the experiences of thousands of people amount to anything, they certainly have had not only the best of the argument, but immeasurably the best results.

It is well before I proceed to a thorough discussion and presentation of this subject to define the true meaning of the word "fasting." To fast is totally to abstain from food, either liquid or solid. This does not exclude the use of water. But absolutely nothing else, either liquid or solid, can be used in a true fast as its advocates understand the term. A partial fast, therefore, is no fast at all. The term may be used for convenience sake, but it is a misnomer. One either fasts, or he partakes of food, and when he does the latter he cannot be said to be doing the former.

The first time the idea of the benefits of fasting occurred to me was when, in my eager search for some natural cure of disease, I turned to the lower animals. I remember well the course of reasoning that my youthful brain followed. I said to myself, "Here am I, struggling to attain health.

I am supposed to be a creature of superior intelligence, yet my efforts seem to be vain, while the dog and the horse, the wild animals and the wild birds, seem to be healthy and strong all the time, knowing nothing of the diseases which make my life so miserable." Then it was that I observed that, when there was anything the matter with them, they abstained from food, and it was this fact that led me a little later, when I was attacked with pneumonia, to have the courage to go without food.

From that day to this I have always held that fasting was the natural cure for disease. The animals do not desire food when they are sick. Their unperturbed instincts lead them to refuse it, even though it is urged upon them by the higher (!) animal, man. As I further studied disease, with this great fact from the animal world in my mind, I soon saw that when we were sick we revolted at food just as the animals did. Then I observed how the physician and friends of the sick person urged him to eat to keep up his strength, and I also noted how the human brain and body were drugged into acquiescence to this idea that is so distinctly contrary to the teachings of Nature. The logic of the situation then became inexorable, and the whole matter resolved itself into the following simple propositions:

1. When animals are sick, they refuse to eat food of any kind.
2. As soon as they are well, and not before, they begin to eat.
3. It is natural for man to do the same thing, but his instincts have become perverted, and his judgment distorted, so that he does not know it.
4. When a man is sick, therefore, he is persuaded that he must eat, contrary to the natural repulsion he has for food. His physician comes and drugs the warning sentinels of the body, and in this drugged condition he swallows the food which in reality adds to his disease.

On one occasion I was taken severely sick with a cold, and it soon developed symptoms of pneumonia. Even at that early

more enlarged experiences and those of thousands who have come to me for advice, and I no longer feel that it is essential to eat to sustain life, for seven days, fourteen days, twenty-one days, forty days, or in special cases even as long as eighty or ninety days. Indeed, there is no fact of life more certain and positive to me than the great advantages that accrue from intelligent fasting.

In the light of our enlarged knowledge, the basic principles of fasting may be stated as follows:

1. The body if left alone is self-regulative and self-curative.
2. In cases of acute disease, it is normal and natural for the body to refuse food. Animals and men alike do this.
3. Localized disease is an extraordinary effort of the body to eliminate excessive poisons that it cannot rid itself of through the usual excretory passages. While the body is thus seeking to rid itself of these excessive poisons, all food is unnecessary and injurious.

There is no excuse for any human being dying from an acute disease. It matters not what this is, if you follow the normal, natural instincts of the body, abstain from eating, drink plenty of water, and get all the fresh air and sunshine you can, and in addition, properly stimulate the spine and the functional system so that they will the more readily eliminate the poisons that are distressing you, you will completely cure yourself. These natural processes, without any aid of drugs, will surely cleanse the body thoroughly, eliminate all poisons from the blood, and prepare the body rapidly to build itself up to renewed and perfect health and strength as soon as the fast is broken and proper food is again taken in natural quantities.

To return to the disease from which I cured myself—pneumonia. To most people, pneumonia is a terrible ailment much to be dreaded. But, except in cases of low vitality superinduced by drugs or dissipation, as before referred to, no ordinary person need have the slightest fear of it. It is not surprising that under the ordinary treatment many thousands

day I had lost my faith in drugging as a remedy. My previous years of weakness, which neither physicians nor drugs had seemed able to help in the slightest degree, set me to thinking. The thought somehow occurred to me that the Creative Power of the Universe surely must have intelligence and must have devised a plan of cure. And it seemed unreasonable to me that anything could interfere with that plan.

So I came to the conclusion that the human body was self-regulative and self-curative, if it merely had a good chance to be so. Consequently, when I began to feel the knife-like pains in the chest that accompany pneumonia, and they grew worse every hour, my thoughts took a most serious turn. I had already abandoned medicine, and when I did not feel perfectly well I compelled myself to do a great deal of exercising. As the pneumonia grew worse, I found it difficult to exercise. It must not be forgotten that I had gone on eating as usual, whether I felt like it or not, for I then believed as everybody else did, that "it was absolutely necessary to eat to keep up my strength." As I grew worse instead of better, I tried to reason the matter out still further, and my reason followed somewhat this line: "If this inflammation that is now giving me so much pain in my lungs cannot be made to disappear through exercise, or outward stimulation, what other natural thing is there that I can do?" And like a flash the thought came that the food I was eating was feeding the inflammation—that if I stopped eating, the self-curative power of the body would of itself drive out the disease. I missed one or two meals, and then ate a little, for I was still under bondage to the idea that eating was essential to life. At the end of the second day the pains were considerably reduced, and I was satisfied that the inflammation was not as severe as it had been. At the end of the third day there was a decided change for the better. The fourth day all symptoms of pneumonia had disappeared. That was my first lesson in fasting. And the attitude of mind I then gained is exactly the attitude I hold to-day. To-day, however, my own early thought and experience are fortified with years of later and

of patients die, and that the more progressive of modern physicians are turning to Nature for its cure. The whisky that used to be an invariable part of the early day prescription is now rigorously excluded, and only milk is given, with plenty of water and fresh air. If the milk were eliminated and the inflamed membranes had nothing but cooling water given to them, the self-curative powers of the body would surely eliminate the poisons that cause the inflammation, and rapid recovery would ensue. I know a physician in New York who has treated about fifty cases of pneumonia in this way and has not lost one, though the ordinary mortality record is from twenty to thirty per cent.

Men who are fleshy should never hesitate for a moment if they are attacked by an acute disease, to take a fast long enough completely to eliminate it. Such persons have enough stored up energy and fuel to run the body for a month or two months without the slightest fear of injury. No matter what their ailment, they cannot possibly be injured by fasting, and there is every assurance that they will be able to rid themselves of the disease. I have referred elsewhere to the case of President McKinley. No sane, unprejudiced man, in the light of the knowledge of fasting which I have here given, can read the bulletins issued by the doctors themselves and not see that the President was simply poisoned by the food that he was urged to eat.

Take the case of Mark Hanna. As is well known, he was a large, fleshy man, with enough stored up nourishment in his body to last him for even two or three months. He was afflicted with a chronic trouble which the physicians could not



Emil E. Kusel, who in April, 1911, completed a forty days' fast, curing a most painful case of hemorrhoids and catarrh of long standing.

cure. He was urged to fast, but his physicians and political and newspaper friends were so assured that he would die if he refused to eat, that he was overpersuaded, and we all know the fatal result.

It cannot be stated too strongly nor too often that the *feeding of those who are sick with acute diseases is one of the greatest crimes of the present day.*

Fasting is by no means a new idea. It is far older than the history of civilized man, for, whenever suffering from wounds or disease, it has been the invariable habit of lower animals always to fast until the period of danger was passed.

The Bible and the religious books of all peoples contain many injunctions as to fasting, and the benefits arising therefrom to the body, mind and soul were accepted as a matter of course in ancient times. The Roman Catholic Church has always believed and taught the efficacy of fasting, and fast days as well as feast days occur with frequent regularity on their calendar. John Calvin and John Wesley, the founders respectively of the Presbyterian and Methodist Churches, both strongly advocated fasting for the benefit of both preachers and people. The Hindus and other mystics of all ages have not only advocated fasting, but followed the practice, even for long periods at a time.

Unfortunately in this, as in many other good things handed down to us from the ancients, we have presumed that our advanced civilization gave us superior knowledge in regard to matters of this kind. The result is that fasting has become almost a lost practice, except in the case of those whom the generality of mankind refer to and account as religious fanatics. But, in the awakening of the minds of intelligent men and women to more natural processes of living, fasting is again coming into its own.

Those, who like myself have seen men and women fast ten, twenty, thirty, forty, fifty days not only without injury but with positive benefit, cannot help a feeling of amusement when they hear the popular ideas of the "absolute necessity"

of taking a daily supply of nutritious food. Here are a few facts of history that such poorly informed persons should know.

Thomas Campanella states that frail nuns often sought relief from attacks of hysteria by fasting "seven times seventy hours," or twenty days and a half. Total abstinence from food for three weeks or more was not an uncommon prescription of Avicena, the great Arab physician, who was so averse to drastic remedies that he would sooner watch all night at the fever-bed of a patient than risk complications by giving him opiates.

The penance-worn saints of the early Christian Church thought nothing of retiring to the desert for a month or two, to fight down temptations and dine on the water of some dilapidated old cistern. To touch even millet-seed on such occasions was considered a breach of their vows, forfeiting the merit of the enterprise, but at the end of the second month the gaunt world-renouncers had generally strength enough left to return home unassisted and prove how much benefit the fast had been to them. Robert de Moleme, the founder of the Cistercian brotherhood, was overcome with grief on learning the death of a female friend, and resolved to follow her to the Land of Shades. Being averse to direct suicide, he retired to the mountain-lodge of a relative, and abstained from food in the hope that one of his frequent fainting fits would fade into the sleep that knows no awakening. But finding himself alive at the end of the *seventieth* day, he reconsidered his resolution and began to suspect a miraculous interposition of Providence. By resuming his meals, in half-ounce instalments, he contrived to recover from a condition of frightful emaciation, and in the supervision of an ever-increasing number of scattered monasteries, led an active life for the next fourteen years.

Trance-fasters, like Augusta Kerner of Ingolstadt, survived in a semi-conscious condition for nearly a quarter of a year. We are all more or less familiar with the undoubtedly true stories of miners entombed in collieries who have been

found alive after weeks of enforced abstinence from any more nutritious food than scraps of leather soaked in pit-water and masticated with desperate perseverance. Sailors, deprived of food and drink, have endured exposure to the glare of a tropical sun for weeks.

But the marvels of long-continued abstinence without loss of strength reach their maximum in the winter-sleep of several species of warm-blooded animals. Reptiles, with their small expenditure of vital energy, can easily survive dietetic deprivations, but bears and badgers, with an organization essentially analogous to that of the human species, and with a circulation of the blood active enough to maintain the temperature of their bodies more than a hundred degrees above that of the winter storms, dispense with food for periods varying from three to five months, and at the termination of their ordeal emerge from their dens in the full possession of their physical and mental energies.

The black bear of northern Russia rolls itself up in scrap-heaps of leaves and moss, about the end of November, trusting to good luck to be left to the enjoyment of peaceful slumber till middle of March, but if disturbed before the end of February is wide awake in a minute and attacks the intruders with a fury expressed in a Slavonic phrase: equivalent to "savage as a waked winter bear." Badgers leave their burrows a little sooner, being often awakened by a spell of warm weather, a month before the vernal equinox, and after an absolute fast of ten weeks will trot for miles in search of roots and acorns that have perhaps to be scraped out of the half-frozen ground.

The little dormouse, in its winter sleep of five months, suffers a loss of weight sometimes exceeding forty per cent., and exhibition fasters have survived a reduction of thirty per cent., without anything like a total collapse of vital vigor.*

*Karl Vogt in his "Curiosities of Instinct," mentions the case of a spaniel that had accidentally been locked up by visitors in the attic of an old castle-ruin, and contrived to procure a few drops of water by gnawing the edges of a cleft in the slate-covered roof. His life had thus been saved by the accident of a few heavy rain-showers, but there was no chance for a crumb of food, no grain, leather, rats or mice, no vestige of living things with the exception of a few

In the moulting season certain cage birds prefer to get along for a month with a minimum of food, to compensate the lack of facilities for active exercise, and Dr. Oswald relates the following story of the case of a little dachshund (a species of bowlegged beagle) that survived a fall from the loft of a tall building by three weeks of almost total abstinence. "During a visit to the riding-school of a cavalry regiment I had turned over the dog to a sergeant, who put him in a barn, and finding that he could crawl out under the gate and was apt to come to grief by being kicked by a horse, finally put him in a bag and ordered one of the men to lock him up in the hay-loft at the top of the building. That checked his restlessness for the time being, but on stepping out on the street, an hour after, I heard a whine as from the clouds, and looking up saw my dachshund crouching on the edge of the open door and loudly yelping to draw my attention to the discomfiture of his situation. In the next moment he had lost his balance, and after a series of aerial somersaults, landed on the hard pavement, with a crack that seemed to have broken every bone in his body. Blood was trickling from his mouth and nostrils when they picked him up, and the troopers advised me to "put him out of misery," but he was my little brother's pet, and, after some hesitation, I decided to take him home in a basket and give the problem of his cure the benefit of a fractional chance. Investigation proved that he had broken two legs and three ribs, and judging by the way he raised his head and gasped for air, every now and then, it seemed probable that his lungs had been injured.

"The location of his grave had already been settled; but the next morning he was still alive and lapped up a pint of water. For twenty days and twenty nights the little terrier stuck to

spiders under the rafters of the roof. The whole summer passed, and a part of autumn; but during the first week of October there was a picnic on the castle mountain, and a wandering party of sight-seers rescued the little prisoner that had been locked up about the middle of June. Its ribs could be counted as easily as in a skeleton, but it was still able to drag itself across the floor and lick the hands of its deliverers.

Chossat in his *Recherches sur l'Inanition*, states that the land tortoise of southern France can starve for a year without betraying a reduction of vital energy, and the *Proteus anguinus*, or serpent salamander, even for a year and a half, provided that the temperature of its cage be kept above the freezing point.

life and his cotton-lined basket, without touching a crumb of solid food, but ever ready to lick up a few drops of cold water, in preference even to milk or soup. At the end of the third week he made an effort to leave his couch, and a few days after contrived to stagger along the floor to get the benefit of a hearth-fire. He had broken his fast with a saucerful of sweet milk, but only on the evening of the twenty-sixth day began to betray a personal interest in the contents of a plateful of meat-scraps that had been placed near his basket every morning.

"Before the end of the winter he accompanied his friends to that same riding-school and was introduced to the veterinary surgeon of the regiment. Misknit bones had made his crooked legs a trifle crookeder, but he could run again and attest the vigor of his lungs by a lusty bark. A clear case of recovery in spite of—we did not venture to say *because of*—total abstinence from drugs."

"What did you feed him on?" inquired the surgeon, taking it for granted that Nature must have been assisted somehow or other.

"Nothing, for the first three weeks."

"What?"

"Nothing, sir. Or, to be quite exact, nothing except some air and water."

The surgeon shook his head. "Stout chaps, these dogs," he muttered, caressing the paradox with the tip of his boot. "The vitality of those brutes!" he probably thought to himself; "the idea of that thing recovering in spite of such neglect."

One of the best known books dealing with diet and fasting was written by Luigi Cornaro, a noble Venetian who was born soon after the middle of the XVth century. He was a contemporary for seventy years of Titian, the great artist, and at the age of eighty-three wrote his first essay on the subject of regimen and diet. In the subsequent twelve years he produced three other similar books. For the first forty years of his life, he lived the ordinary fast and dissipated life of the nobles of that time, until, his vitality all gone, he was warned by his

physician that his days on earth were numbered. Being of an inquiring mind, he began to do a little thinking as to how he might prolong his life. He came to the conclusion that, as he had squandered his vitality by excess of eating and drinking, it would be natural to assume that a corresponding decrease might have a beneficial effect. Calling upon a will power that must have been reasonably strong, he determined to eat simply and in small quantities, to avoid entirely the heavier wines, and to drink the light wines with moderation. In a short time the benefit of this rigorous regimen was apparent in that he began to overcome the diseases that his physicians said would kill him, and in a short time thereafter, he was restored to almost perfect health.

As he grew older he diminished the quantity of food and thus brought himself to a ripe old age, finally expiring at Padua "without any agony, sitting in an elbow chair, being above an hundred years old." One article of his diet was the juice of the grape. As the time approached when the new grapes were beginning to ripen, he found that the old juice became distasteful to him and made him lose his appetite, whereupon for about two months each year, he lived upon the smallest possible modicum of food until the new grape-juice was ready, when he immediately revived and regained his health and strength. To this period in which he ate so little food as to have closely approximated a fast may doubtless be attributed his general health and wonderful longevity. Without anyone to teach him and nothing but Nature as his guide, after the most learned physicians had given him up to die, he thus brought himself into a state of health, lived an active and useful life, and did not pass away until he had lived far beyond the ordinary period allotted to even the strongest of men.

Believing as I do that, practically speaking, there is but one disease and that is an impure blood stream, it can readily be seen that fasting would necessarily be one of the readiest means of purifying it. Regarding air and water as foods, as well as the solid substances to which we commonly attach that

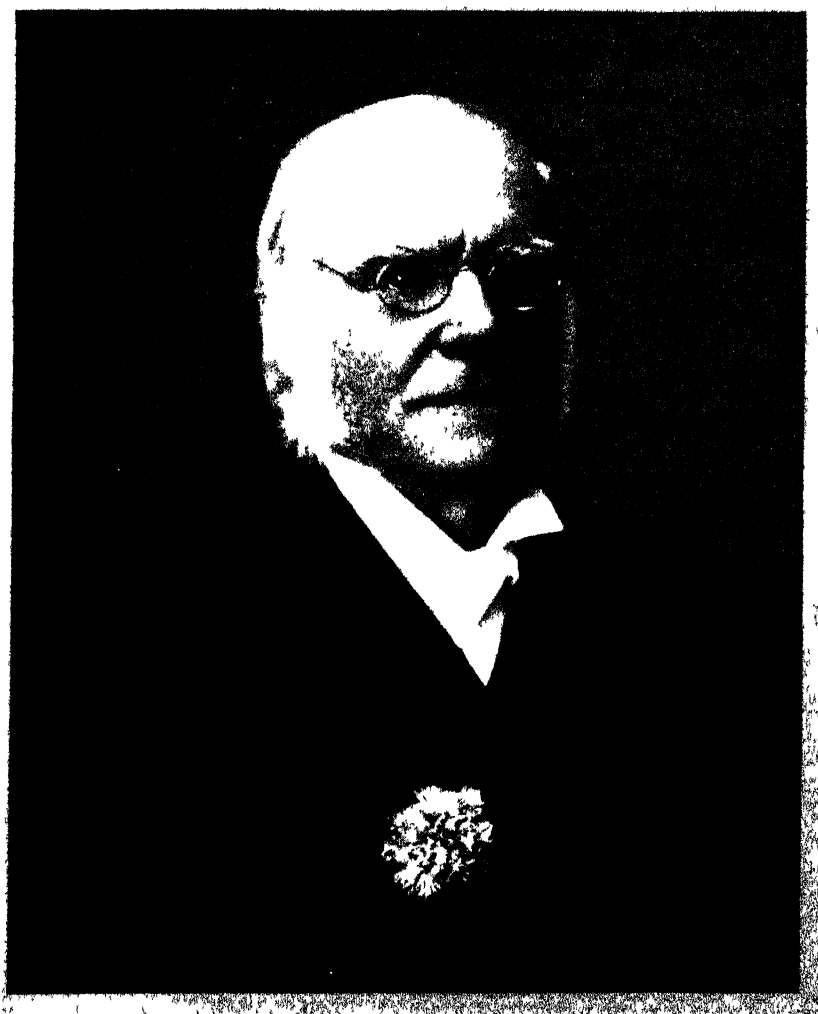
name, there is, in reality, no such thing as fasting, but, as air and water do not require the exercise of the organs of digestion, fasting enables one to give them an opportunity to indulge in the most perfect and complete "house-cleaning."

It was about forty years ago that Dr. Tanner made his celebrated fast of forty days in the city of Chicago. Many persons who believe that fasting is injurious think Dr. Tanner passed away long ago; but he did not; he is in California treating his patients at the present writing (1912.) Having read in the newspapers at different times that he was dead, and in order to know the truth of the story, I wrote to find out and received a letter from Dr. Tanner. I then sent him an invitation to write an article for *Physical Culture*, and in due time received it from him. Dr. Tanner began fasting for the distinct purpose of curing most of the various ailments which he had at that time. During the first two weeks of his fast he went without water. It is comparatively easy for a person to go without food but it is very difficult to go without water.

After Dr. Tanner began to use water his strength, instead of continuing to decrease, began to increase, and, after his first drink he ran a race with a young reporter who thought that he could not retain his strength while fasting.

The following cases of disease conquered by fasting are but illustrative instances of the efficiency of this method of treating disease.

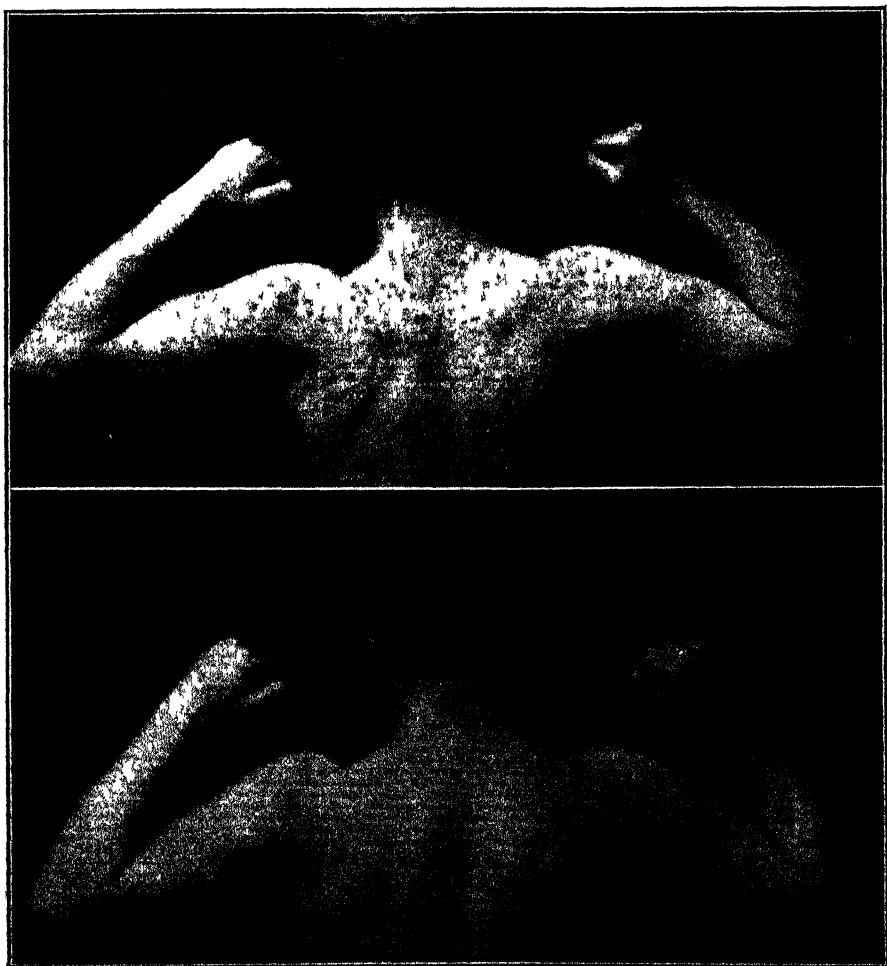
Mr. George W. Patterson, of Denver, Colo., fasted seven days, beginning July 8. On the sixth day of his fast he said in an interview with a *Denver Post* reporter: "My mind is as clear as a whistle, and I have begun work on an invention I am interested in—a pair of boat shoes to walk on water by the use of wave motors. Do I feel hungry? Not a bit. On the contrary, I have a positively repulsive feeling toward food. I exercise every day. This morning I jumped eight feet one inch, chinned a bar fourteen times. Usually I can do this only ten times with ease. I broke my record on the spirometer also, this morning, raising it to four hundred and forty-five cubic inches. The spirometer measures the lung capacity,



Dr. Henry S. Tanner, the world-famous faster.

you know, and previously I had never raised it more than four hundred and twenty-eight cubic inches. This morning I took a lively run besides my other exercise. I have been busy teaching physical culture during my fast."

The extraordinary results of fasting in the case of Mr. Tuthill have become a matter of widespread comment and interest. There are now ten or twelve people in Minneapolis afflicted in various ways, who have taken a course of absolute fasting. Mrs. E. A. Russell, of the Russell Coffee House, is



The upper photograph shows an eruption on back which was entirely cured by a fast of seven days, as shown in the lower photograph.

among the converts. She has fasted for three weeks three days at a time. Mrs. Russell is fasting for the sole purpose of reducing weight and is therefore relieved of the necessity for total fasting. On the fourth day of her fast she takes a glass of milk with an egg beaten in it. Mrs. Russell declares that she finds fasting very beneficial in numerous ways.

C. E. Burrows, of St. Paul, is one of the most remarkable cases treated by the fasting system. Mr. Burrows was suffering from an abscess on his liver and a fast of four weeks removed the difficulty entirely. It may be added that, although this cure was effected some time ago, there has been no return of the unfavorable symptoms. Mr. Burrows, after eating solid food for ten days, states that his stomach did not as yet perfectly assimilate food, but that he felt strong and well and satisfied that he has been completely cured.

In 1902, Mr. Thomas Morrin, Chief Engineer of the Mills Building, San Francisco, Cal., entered upon a forty-day fast for chronic stomach trouble. He had been under the charge of ordinary physicians and had swallowed drugs until his stomach refused to receive them, or even any kind of food, and in his deepest extremity he thought it would do no harm to try the fast, as he was going to die anyhow. He had the usual experiences of the clamor of the abnormal appetite, which increased in power until the close of the third day. On the fourth day it disappeared, and on the fifth day the claims of appetite gave place to the usual disgust at the thought of food. On the eleventh morning he was over-persuaded by anxious friends, who convinced him that he had fasted long enough, to try to eat a little breakfast, but the usual revulsion of his stomach to the food convinced him that the attempt to eat was unwise. So he continued the fast which lasted a complete forty days. His ailment disappeared and perfect health was restored.

At the same time Ambrose Taylor, of Rialto, undertook a fast for the cure of rheumatism. He was sixty years of age and for several years had been afflicted with rheumatism in the left leg and hip. At last it became so bad that he was com-

pelled to take to his bed. Then he resolved to try the fast. He had the usual three or four days' experiences of appetite, but on the fifth day he had an attack of partial paralysis. This alarmed him, but his physician succeeded in convincing him that this was merely the result of the nervous and muscular activity of the body to rid itself of the disease which for so long had been controlling him, and that if he would but persevere the paralysis and the rheumatism would both disappear. A few days later he had another stroke, and later still another, but as the two latter strokes were far less severe than the first one, he persisted in the fast. As the old gentleman quaintly put it, "When I saw how things were going I became so absorbed in watching the paralysis that I forgot my rheumatism."

A few days after the last stroke he suddenly discovered that his rheumatic leg had become perfectly limber, and, as he had not been able to straighten it out for years, his delight was unbounded. He fasted for twenty-three days, at the end of which time all symptoms of paralysis had disappeared, and he was almost cured of the rheumatism. The physician who prescribed these fasts, Dr. D. Albert Hiller, reported at the same time that Mrs. Judith Sampson, of Penryn, fasted seventeen days for dyspepsia; James D. Wrenn, of Martinez, fasted twenty-three days for stomach trouble, and Cora Brown, of Redwood, twenty-seven days, for acute nervousness—all with the most happy results.

One of the most remarkable cases that I have come in contact with, giving evidence of the marvelous benefits of fasting, was that of a patient who came to me suffering from what a layman would call a paralyzed throat. The muscles that controlled swallowing were completely paralyzed. Neither water nor food of any kind, either solid or liquid, could pass into the stomach. The ailment came on suddenly from a general stroke of paralysis. One of the methods of procedure in cases of paralysis of this kind is to make an opening in the chest or abdominal wall and insert a silver tube into the esophagus or stomach, through which the patient can be fed. In

this case, however, after a careful examination, I simply advised the patient that he rest as comfortably as possible; undertake a fast as long as necessary, at the end of which he would feel absolutely assured that the paralysis would ultimately disappear under the influence of the general stimulation of the vital organism which we should administer in connection with the fasting régime. To avoid his suffering because of excessive thirst, after the bowels moved each day, an enema consisting of two to three quarts of water was daily given and retained. I inspired the patient with confidence as to the outcome of this regimen. He realized that I was doing the best possible thing for him, as no other regimen could be recommended, unless he was willing to resort to the surgical operation described on the preceding page. Consequently he entered into the fast with a good heart. Day after day he fasted. On about the tenth day there began to be signs of life in the paralyzed parts, and I suggested that he try and swallow a little olive oil, as he complained of the throat being parched and dry. He succeeded, and his success gave him renewed courage. Two or three days thereafter he was able to swallow a little milk. This materially increased his energies, and within three or four days after he took the milk the full power of his throat returned, thus saving him from a very serious operation, and from the necessity of feeding himself in an unnatural manner forever after. In fact, had the operation been performed, and if he had been fed as a patient is under such circumstances, it is possible that the paralyzed muscles would never have recovered their powers—the paralysis of the throat would have remained permanent.

Though in some cases, through the influence of fasting the blind have literally been made to see, and the lame to walk, I feel that this case was perhaps one of the most remarkable of all with which I have come in contact. It indicates the extraordinary power of the body to cure itself of all ailments—even the most serious—if the proper opportunity is given it.

While it is a fact well known to physiologists and chemists, it is a surprise to most laymen to learn that, from the time of

birth to the time of death, the human body is constantly generating poisons. This is accounted for by the fact that as soon as the cells of the body perform any labor they begin to disintegrate and are soon destroyed, but while the process of destruction goes on, the blood, constantly circulating to the remotest parts of the body, brings to these spots the materials of which new cells are made, and immediately the old cells begin to be destroyed, the new material taking their place. These changes are taking place every moment in the growing bodies of plant, animal or human being.

How wonderfully different this is from any ordinary mechanical process of enlargement! If we wish to enlarge a shelf, for instance, we must tack on, with greater or lesser skill, a new piece of wood to the old shelf. In other words, there is no actual growth to the inert substance. If we wish to lengthen a bar of iron, we must either heat the iron and pull it out, so it is made smaller, to gain the required length, or we must weld another piece on if we wish it to retain the original size. Suppose that we have a leather bag that we wish to increase in size. This can be done only by stretching the bag, or by opening one end and inserting a piece of new substance.

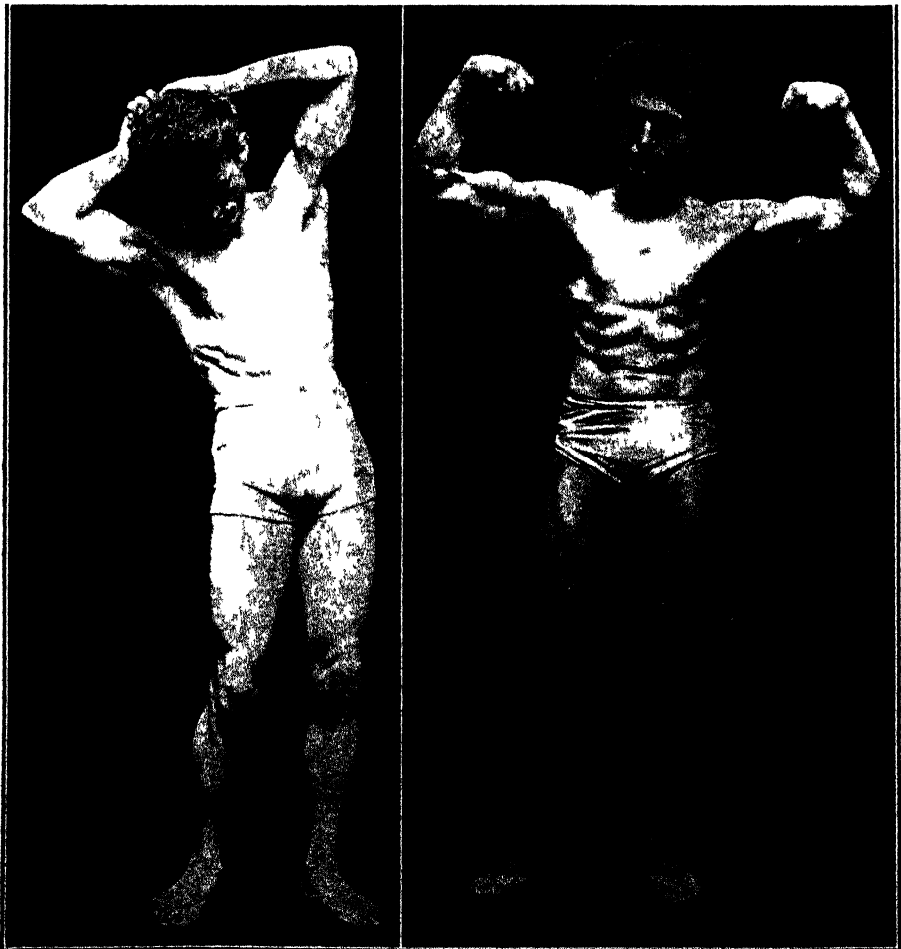
But in this marvel of growth in living substances, whether vegetable or animal, the process is conducted without any such mechanical and clumsy additions. The skin of the baby is not stretched to allow for the enlargement of the body, but, without losing its elasticity for one moment, the cells which compose the tissues of the old skin are gradually removed to give place to new cells, and more of them, so that the process of growth is one of the most beautiful and marvelous of all the wonderful phenomena of life.

This change in cell structure is called by scientists *metabolism*.

When the old cells disintegrate and give place to the new ones, every old particle must be removed as speedily as possible from the body or it becomes an irritating poison. Therefore the body is provided with a series of wonderful organisms,

one of the chief functions of which is to eliminate these waste products from the body.

We are all so familiar with the two chief avenues through which the largest amounts of bodily waste are cast out, namely, the urinary and defecating organs, that we too often ignore those that eliminate in a less obvious fashion. One of the chief offices of the skin is to eliminate the waste and poisonous products of metabolism by means of what we call perspiration. The lungs, by the process of out-breathing, also eliminate



Bernarr Macfadden at the end of a seven days' fast

Portrait of Bernarr Macfadden taken two weeks after the conclusion of a seven days' fast.

a large amount of poisons. The nostrils eliminate, in the shape of mucus, poisonous matter that if allowed to remain in the body would produce serious injury.

One of the wonderful facts that our scientists tell us is essential to this process of elimination, is that, while it is activity that disintegrates the cells, there is no replacement by new tissue unless there are distinct intervals of rest. In other words, *rest* is as essential to the building up of new tissue as is *exercise*. I have already shown the great importance of exercise in every muscle of the body, if one would procure and maintain perfect health. This is one of the unchangeable facts of life. Movement, activity, exercise, is the price we pay for physical vigor, but side by side with the *law of activity* is the *law of rest*.

The athlete who imagines himself capable of working continuously, because he had gained marvelous physical development, and who positively refuses to rest or sleep, will speedily kill himself. Sleep is Nature's essential method of giving to the physical organisms their required rest. But, the objector asks: "How about the functions of the body that you have called our attention to, that ceaselessly work without intermission from the moment of birth to the moment of death, whether one be asleep or awake?" In reply let me say that this statement of ceaseless labor is only partially true. In these functions, what seems to be ceaseless activity is constantly and regularly interrupted by minute intervals of rest. The heart, with its never ending activity, sucking in and forcing out blood at the rate of seventy-two contractions and expansions a minute, seems ceaselessly to work on, day and night, though one live to be a hundred or more years old. Yet each expansive and contractive effort is followed by a *short interval of rest* during which the change of cell structure takes place.

In this law of metabolism, or the breaking down of the cell structure, and rebuilding it with new material, we have not only the whole theory of exercise, but the basis for the theory of fasting. The more one exercises, the quicker the

old cells are broken down and new cells take their place. Yet this must be done with reason and discretion, for, if one exercises too strenuously, the organs of elimination are unable to remove the poisons as fast as they accumulate, and then serious trouble is the result. Who is there that has seen a runner, racing at topmost speed to gain a goal within a given time? The faster he goes and the longer he runs, the greater his distress. What is the secret of this distress? As Dr. McKenzie says, it is because "the amount of waste material suddenly thrown into the circulation is greater than can be eliminated by the lungs. The breathing becomes rapid and shallow, the pulse quick and fluttering, and the runner feels a sense of constriction around the chest; his head swims and throbs and his face takes on the anxious expression so eloquently telling of the thirst for air.

"The face of the breathless man is unmistakable. The smoothness of the forehead is broken by wrinkles spreading out over the inner end of the updrawn eyebrows. The general direction of the eyebrows is just the reverse of that seen in violent effort. They are drawn upward and inward by what the French call 'the muscles of pain', whose action is seen in the expression of grief, mental distress, anxiety, or bodily pain. The upper lids in breathlessness droop and half cover the eyeball, giving a look of great lassitude to the suffering expressed by this region. The nostrils are widely dilated, and the mouth gapes, with lips retracted in the mad struggle for air. The raised upper lip adds to the look of sorrow and pain, while the down-drawn mouth angle, the tongue closely pressed against the teeth, the sunken cheek, and the open mouth, all go to increase the exhausted, haggard look so characteristic of this state, in distinction to mere bodily pain or mental suffering. The general poise of the head is backward, the chin thrust forward, and the neck strained or convulsed."

Now let the runner rest for a while. Speedily his breathlessness and look of distress fade away. Why? Because he has given the organs of elimination a chance more ef-

fectively to do their work so that the accumulating poisons are not there to produce distress.

Our civilized methods of eating place so great a tax upon the digestive organs that they may be compared to the strenuous race of the runner. We are trying to compel the body to digest too much food, composed of too great a variety in too short a space of time. The result is the eliminative organs of digestion are not able to get rid of the poisons as fast as they are created. Then follow all the long train of diseases that are simply Nature's warnings that we are running the race too fast. The drug physicians and the patent medicine manufacturers step in at this juncture and say to us: "Don't pay any attention to these Nature warnings. Here, in return for your money, we will give you a drug, a poison, a mixture, which will artificially compel your body to get rid of those poisons that are troubling you." And because we do not understand that, as a rule, all artificial helps do far more harm than good, we accept the false help thus seductively offered, and by so doing considerably reduce our capacity for real living, as well as shorten the actual span of our lives.

What is the natural remedy offered by Nature at such times? Is it not self-evident? Rest. Complete rest to the whole of the organs of mastication, digestion and assimilation. Rest, just as complete as the rest of sleep is to the athlete, is as clearly indicated as it is possible for benignant Nature to speak. The path is so clear that "The wayfaring man though fool need not err therein."

Experience in thousands of cases has demonstrated that this perfect rest can extend for a period from a day or two in length to often as long a time as one hundred days. We have heard of men to whom has been denied the privilege of sleep for three or four weeks and who have then gone to sleep and remained in a somnolent condition for several days and nights. It is just so with fasting. If a faster is free from mental worry or fear and he is not exposed to pain or inclement weather he may prolong the rest of the digestive organs to the almost unbelievable extent I have mentioned.

It is a fact that has been demonstrated again and again that many invalids instead of losing strength by fasting gain it. In one case a woman was carried to one of our institutions on a stretcher, so weak from mal-nutrition that she was unable to walk. Her physicians had prescribed all kinds of nourishing diet which she had been unable to digest and in spite of food, drugs and nursing she had rapidly grown weaker. She was at once placed on a fast, and to her amazement, she, day by day, increased in strength. Not understanding the philosophy of her cure, the result seemed absolutely miraculous. For years she and her friends, encouraged by her medical advisers, had been stuffing all the food into her body that she could compel herself to swallow, with the hope that thereby she would gain strength, while all the time she had been growing weaker. Then, to come to us, and in a fast of about two weeks, not only to lose her dyspeptic symptoms, but to gain health and strength, surprised her beyond measure.

We have often been asked, rather in fun than in seriousness, if we claim that fasting is a general "cure-all." But it is in all sincerity and seriousness that I answer that fasting comes as near being a "cure-all" as anything can possibly be. There are few cases indeed of any disease, or any degree of sickness, that will not be benefited by fasting. The stomach is a natural indicator as to when food shall be taken. If there is any trouble whatever in digesting what is eaten, the natural remedy is to fast. And, as all diseases are but the endeavors of the body to get rid of the poisons that, uneliminated, would produce death, and eating but adds to the poisons while the process of elimination is going on, it is evident that the natural way to get rid of all disease is to refuse to eat so long as poisons still remain in the body.

In our various institutions and to those who have sought our advice, we have prescribed fasting with the happiest results in cases of every kind of dyspepsia and stomach troubles, even to the most alarming cases of prolapsus, where dangerous surgical operations had been pronounced the only hope of relief; cancers, pneumonia, every form of skin disease, chronic

headache, constipation, nervous exhaustion, low vitality, hemorrhoids, diseases of the kidneys, general debility, asthma, dropsy, various forms of liver complaint, catarrh of every kind, rheumatism, typhoid and typhus fevers, scarlet fever, and indeed practically every ill that human flesh is heir to. The only cases where we do not advocate long fasts are of tuberculosis and catarrhal complaints where the vitality is too low to risk the loss of any serious amount of tissue. In all other cases fasting not only produces no injury, but on the contrary such immediate benefits as to be really remarkable.

One of the most dangerous ideas of the popular mind which is shared by the medical profession, is the superstition that we must eat to keep up our strength. Never was there a more injurious and untrue doctrine promulgated. My own experience and that of thousands of people who have fasted has demonstrated the absolute falsity of this idea. It should be stamped upon the mind of every growing child that it is not what we eat that benefits us but what we assimilate. Imperfectly digested food is not only unnecessary, but is a positive injury. It is a crime against the stomach to put into it food that it cannot or does not digest. Every physician who insists upon a patient eating when there is no appetite for food, or an actual repulsion against food, is unfit for his profession and should be drummed out of it. Here is the self-curative power of the body, implanted by the All-wise Creator of the Universe, telling the sick person in so plain a manner that a fool could not misunderstand, that the way to health is not to eat, and yet this foolish and arrogant physician comes along and presumes to overrule and override this plain teaching of Nature, and with dogmatic insistence compels the patient to eat that which is no better than a poison —which continues the disease by feeding it.

One has but to watch the animals of the field, or even the ordinary domestic animals, to learn the fact that when they are suffering in any way they refuse to eat. If a horse has been overworked and any form of disease induced thereby, you

may tempt him with the finest hay and grain, but he absolutely refuses to eat. A sick dog or cat has more sense than most men—even the learned members of the medical profession—for it crawls away where it can lie still, refuses to eat food, and will occasionally take a drink of water, and thus by fasting unconsciously teaches man a lesson that he so stupidly refuses to heed.

It is the great fear instilled into the mind of civilized man and woman during the centuries of medical tyranny and dogmatism that has deterred intelligent people from following this self-evident healing process of Nature. They have been afraid to fast. They have imagined that to abstain from food for a week would produce death, and, if one prevails upon them to begin to fast, the natural disturbances of the first day or two, owing to the breaking of the habit of taking a full quota of food three times a day, whether needed or not, so alarms them as almost, as we say, "to scare them to death."

There need be no fear as to any evil resulting from a fast except in the case of tuberculosis, catarrh and wasting diseases already mentioned; and even in such cases a fast of from two to four days can usually be taken with advantage. In thousands of cases there have been no deaths whatever that could be attributed simply to a fast. In practically every case where death has occurred to a "faster" an autopsy has revealed that there was an organic disease which, with or without the fast, would have caused death. And when it is remembered that out of thousands of diseases that are treated by physicians large numbers die, it is absurd to condemn fasting for the exceedingly small number of cases that die, when, too late, they have been prevailed upon to give this natural method of healing a trial. In my own experience, however, I have not had a single death which could be directly traced to the fast in the thousands of fasts I have advised.

I merely state this as a fact to show that, although I have advised fasting in so many thousands of cases and the fasts have varied from one day to ninety days, the fear of fasting is altogether unfounded

and unreasonable. The fact is, a seven-day fast with an average individual who finds himself a little below par or suffering from a cold or other acute disease, amounts to almost nothing in the way of discomfort or distress.

He will doubtless lose a few pounds in weight, but he will gain in several ways. In the first place, he will get rid of his disease and will *be* in vigor, both mentally and physically, and his whole functional system will be so toned up that he will feel an exhilaration and buoyancy, physical and mental, that will both surprise and delight him.

This, of course, implies that he break his fast in a sensible and rational manner. Even a small modicum of intelligence will tell a man that, after a seven-day fast, he must not overload his stomach with food.

I have spoken of the effects of fasting upon both the mind and body. To many of my patients the effect upon the mind has impressed them even more than the effect upon the body, even though the latter has been wonderfully beneficial. They have come to me with delight and spoken of the wonderful ease with which they could think, the pleasure with which they handled problems that before had been difficult. The reason for this is very clear. Ninety-nine people out of every hundred eat too much. The undigested and unassimilated portions of this food remain in the stomach and intestines, causing a more or less prolapsed condition of these organs, and at the same time generating poisons that affect the whole physical system.

As the brain, which is the organ of the mind, is a part of this system, it yields to the deadening effect of these harmful poisons, and makes the over-eater feel as if he were half asleep. No man can do good mental work when his brain is thus struggling under the influence of these poisonous conditions. But by a few days' fast, the clearing out of this undigested and poisonous mass from the lower intestines, the toning up of the stomach and alimentary canal and the cessation of pouring food into the stomach to add further poisons—

all these things combine to bring about the clarity of mind that is one of the delightful effects of a fast.

I have referred to the fact that I have directed fasts that have continued over many weeks, not only without injury to the fasters but with decided benefit. When these facts are first brought to the mind of many people, they can scarcely believe them and yet when one recalls the hibernating habits of the bear, our idea ought not to seem unreasonable. The bear eats heartily while there are plenty of nuts, fruit, honey and other fattening food and thus fattens himself, so that when the fall comes, he is prepared to search out a hollow tree, crawl into it, and sleep during the cold months of winter. There are thousands of men and women whose bony structures are so covered with fatty tissues that they could fast for weeks, or even months, without the slightest injury to themselves—in fact, with positive relief and permanent benefit.

This body is nothing but a storehouse of energy waiting daily to be used. A healthy body, up to a certain point, can pile up an excess of energy-producing materials which can be called upon at any time. When one goes beyond a certain point, however, this excessive accumulation of fat is liable to cause disease. Nature is willing that her children should become rich so far, but no farther, without danger.

FASTING AND THE MEDICAL PROFESSION.—The ignorance of the ordinary physician as well as the layman, as a rule, is dense upon this subject of fasting. Even those instructors of the multitude, the writers of the daily press, reveal the most colossal ignorance as to the facts of fasting.

Here is an item which appeared in no less a paper than the *New York Times*, May 15, 1910, and if anything can disclose a crasser ignorance upon food and fasting I should like to have it shown to me.

THREE FASTERS HOLD OUT.

But They Each Take Six Quarts of Milk a Day.

GARDEN CITY, L. I., May 14.—Just because every one has said that they would quit before five days were over, Mrs. Trask, Ann Townsend, and Marion MacKellar, the three young women who have entered into an eighteen-

day fast, say they intend to stick it out to the bitter end. From the manner in which they take six quarts of milk a day, and evidently seem to enjoy it, they are likely to hold out.

The self-imposed fast was entered into to cure indigestion, and the three say they have already been cured—that they feel better than ever before. Their families have tried to get them to stop their fast, owing to the unpleasant notoriety attending it, but all are firm.

Every day the trio take their two-quart pails and go away for the day with friends, where they will not be seen by curious persons who seem to think them wonders in their way.

The weight of the fasters has dropped considerably, but the last two days have demonstrated that the milk is holding its own, and the only loss is that which was suffered at first. All are sleeping well, but anxiously watching the calendar for May 25, when the fast ends.

Every twelve-year-old school child knows full well that milk is one of the most nourishing of foods. They will tell you that the baby at home gets nothing but milk for nearly a year, and yet the wisecracks who edited the *New York Times*, headed the article which told the commonplace and simple story that three women, who had over-eaten and had become dyspeptic and as a result, had cut down their diet to two (or six) quarts of milk a day, “Three *Fasters* Hold Out.” How absurd! In some countries milk is the chief diet of the peasantry, those who have the hardest and most laborious work to perform, yet we are safely told that these three dyspeptic women, swallowing two quarts of milk a day, are *fasting*. This is on a par with the general knowledge of newspapers and ordinary drugging physicians upon the subject.

Even those who have given the matter some study, but from their limited and narrow standpoint, raise many and sometimes absurd objections to fasting.

Some years ago *Physical Culture* published an article by Dr. J. S. Lawson, in which he pointed out what he conceived to be the errors of fasting. He claimed that any reduction of the nourishment of the body lessens its processes of growth and development. In furtherance of this argument he says: “All persons are familiar with the appearance of the half-starved baby, and naturally pity it. Of what benefit is it to

the child to suffer for the lack of its nourishment? What good purpose is gained to hold it back in its development?

"Some will say the child may be fed too much, and so it may be, but Nature is wiser than man, and if it be that the child has more food than is good for it, the excess of food is vomited. In other cases the intestines expel it.

"In these two ways Nature protects itself and conserves the interests of the child. Is this not as well or better than the arbitrary stopping of the child's food? Who can say how long a fast may continue without injury to the vital system? Who knows when the delicate adjustment of nerve and blood and cell may be thrown into disorder and seriously damaged by insufficient nutrition?"

In reply to this, Dr. Edward H. Dewey, the father of modern fasting, insisted that, though the child does expel the excessive food by both vomiting and through the intestines, it is done at a great tax upon the brain. He then continued his reply as follows: "In my own practice there was the case of a child four months old who was reduced to nearly a skeleton while taking ample nourishment, the intestines apparently disposing of all that was taken and without the least digestion. The daily feedings were reduced to small fraction of former amount, and the result was a rapid gain in weight and a final complete recovery. A condition of general dropsy is sometimes due to overfeeding in the nursing period. In one case, an infant of four months seemed to be unusually well nourished in spite of half a score of bowel movements daily. These were reduced to one daily by the three-meal plan; the water weight was all absorbed and perfect health thereby assured. This was the first case of the kind so treated in this city in which I practiced, and an army of relatives would not believe that the brave young mother was not starving her firstborn to death.

"There is now a stalwart young man who has not been sick a day since the three feedings of undiluted cow's milk became the plan to be strictly followed during the nursing period."



E. H. Dewey.

Dr. Edward Hooker Dewey, who was regarded by many men and women as the foremost medical exponent of fasting of his time.

Many physicians tell their patients that a large number of deaths have occurred as a result of fasting. Without knowing anything of the cases, they have picked up the news from some newspaper desirous of making a sensation, and in which, through startling headlines, is heralded throughout the country that some one has died during a fast. Naturally the inference they seek to convey is that the fast caused the death, and the drugging doctors will foster this unreasoning fear for purely selfish considerations.

What if some one were to raise a hue and cry against every person who died while taking medicine or while under the care of a physician?

What if some publication devoted to drugless healing were to publish, with glaring headlines, the facts of any one day in connection with the deaths that occur in a large city, with those who are under orthodox medical treatment. Then, suppose I were to do as these newspapers and medical sensationalists do in regard to fasting, and were to presume to say, or suggest, that these people died as a result of the medicine and the treatment of the physician.

What an uproar there would be! I should be denounced as a liar and a slanderer, an assassin of character and an unmitigated scoundrel. And, under such circumstances, the judgment would not be far from correct. I therefore wish to say to those physicians, who, knowing nothing of the cases, recklessly and unblushingly assert that the deaths that have occurred while certain people were fasting resulted simply from the fast, that their conduct is reprehensible and dishonorable.

I am prepared to affirm and challenge anyone to contradict it that the autopsy in every one of these cases would show that there was some organic trouble, which would have caused death, no matter whether the patient had eaten or fasted.

It would be an interesting comparison if one could accurately determine the percentage of deaths among those in the habit of fasting occasionally, and among those in the habit

of eating three or four meals a day, whether they need them or not.

Those who possess a smattering of information on any subject are usually far more self-opinionated than those who have delved down into the mysterious depths of knowledge. Those who know the least about fasting and its effects are usually the loudest in their protests against the practice.

To become familiar with any subject, you must come in close contact with all its various phases. A fast of one meal or one day can give one but little information about the principles of fasting.

On one occasion I heard a very emphatic arraignment of the fasting cure from a man who had fasted one day, and had deduced all his conclusions from this one experience. If we were to adopt a similar attitude on all subjects, many very valuable aids to health and strength would be cast aside as dangerous. The first experience with active, vigorous exercise, for instance, will frequently make one sore and stiff. If conclusions were deduced from this one experience, exercise would be considered extremely injurious.

There is no doubt but that the ordinary medical practitioner honestly and sincerely believes that, sick or well, one must eat to keep up his strength. Suppose you go to an ordinary physician suffering with weakness or debility, and a general run-down condition. Your face looks bloodless and you are scarcely able to walk a few blocks to and from the cars. What does he say? In nine times out of ten he will tell you that you need more nourishing food. But you tell him you have no appetite. He replies: "Then I will give you an appetizer." To this you respond, "But when I do eat heartily, I cannot digest what I eat." Then he says, "I will give you a tonic which will enable you to digest the food you eat."

Now, most probably, you are suffering from eating too much, and your trouble is that your whole body is being poisoned by the food which you cannot digest and assimilate. Is it reasonable, then, to assume that it is a good plan to induce

the body to take food and then compel it to digest it? Would it not be far better to give the body a rest and let it regain its natural tone before giving it more food? This is exactly what fasting does, and the more experience one has in fasting, the easier does he learn to read and interpret the natural processes of the body. For, when he first begins to fast there will be two or three days of discomfort until the clamorous demands of abnormal appetite are silenced. Then for a number of days, greater or less, according to the amount of poison in the body which has to be eliminated, the tongue will be coated, the breath foul, and there will be an entire absence of desire for food, all showing that the self-curative power of the body is at work trying to get rid of the poisons that have been doing the damage in the past. Just so soon as the poisons are eliminated and the normal tone of the body restored, the natural call for food returns. When it comes it is absolutely unmistakable. It is not a ravenous appetite which can only be satisfied by highly seasoned and stimulating luxuries, but is a natural hunger which any simple, natural food will satisfy.

Then, if you are willing to use the intelligence you possess and to follow the simple, natural promptings of the body you will never need to have a headache, a physical discomfort, or a disease of any nature whatever, unless caused by accident, so long as you live. One fast, perhaps, may not suffice to produce these desirable results, but, one fast will teach you so clearly the unmistakable and simple processes of nature, that if you are reasonably intelligent and willing to be guided, you can make no mistake as to when another fast is suggested by the body as a wise and advantageous procedure.

How often it is that the fears and incorrect notions of our friends, educated to believe this unnatural idea, will come to us when we are sick and tempt our appetites in every way. They bring us fried chicken, jellies, soups, salads, puddings and even mince pie, as well as the more rational and naturally tempting fruits and urge us to eat of these delicacies and nourishing foods.

The average individual thinks one who is trying to fast is

simply insane, and perhaps you cannot blame him. Never having heard anything of this method of bodily house-cleaning, he cannot understand it.

As soon as one becomes free from this absolutely absurd as well as injurious notion, that he must eat to keep up his strength, it becomes a self-evident proposition that he should never eat unless he is hungry. No matter whether he misses one meal, two meals, or six. Unless real hunger, with its natural desire for plain, simple, unstimulating and unseasoned foods, is present, he should not eat. No matter what any physician or friend may tell you, the Nature that is speaking within you is immeasurably more wise and learned, and far better understands how to keep your body in perfect health than all the learned and wise men of the world. Hence, listen to the voice within and refuse to eat until the normal, healthy hunger returns. If you pass a meal time and lose your desire to eat, be assured that you will be benefiting yourself to miss that meal.

Another important fact it is well to take to heart and thoroughly learn, namely, even though you feel a desire for food, do not eat unless you thoroughly enjoy it. It is absolutely essential to enjoy your food to get the best results.

OVER-FEEDING BRINGS DISEASE.—It cannot be emphasized too strongly that over-feeding is always an injurious process, whether the over-eater is well or ill. When you eat more than you can digest and assimilate, the undigested portion, in passing through the intestines, constantly throws off poisons which are absorbed into the blood stream, which they thus devitalize and render impure. It might safely be affirmed that immeasurably more people die as a result of over-eating than are carried off by famine. The nervous system is taxed and the reserve forces of the body called upon to get rid of this surplus of food and, in addition, the poisons have the effect of deadening that exuberance of life that makes a man full of vim, energy, snap and force. Hence it will be seen that over-eating has four distinct and injurious effects upon the body.

1. It renders impure the blood stream, thus making the body susceptible to disease.

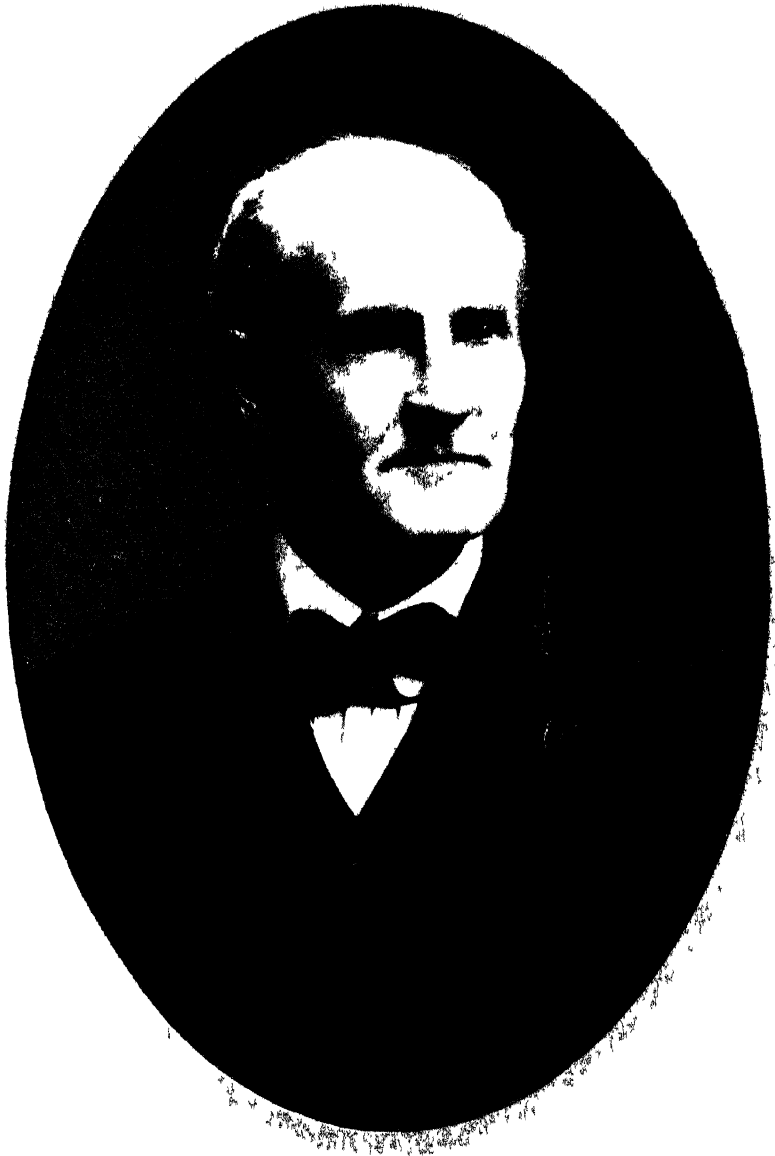
2. If the over-eater is suffering from an acute or chronic disease, the impure blood stream feeds and fosters the disease.

3. It puts a tax upon the nervous system and depletes the reserve force of the body to get rid of it.

4. The poisons that are thrown off from the undigested mass of food poisons the body and brain so that the over-eater is deprived of the joy of that superb, abounding, radiant health which it is the privilege of every human being to enjoy.

There are few tyrannies greater than the tyrannies connected with our eating habits. We have become habituated to the idea that it is what we eat that keeps up our strength, and that we must eat three meals a day whether we need them or not. Even though something within us instinctively impels us to go without food, we have so made appetite our master that we feel if we miss a meal we shall have a headache, or be dizzy, or feel nauseated, or have "a sinking spell," or "feel that terrible gnawing at the pit of the stomach," and rather than suffer these unpleasant consequences of our slavery, we yield to the demands of an abnormal appetite and eat a meal, though we know that by so doing we are strengthening the bonds of our slavery.

There is another side to this fasting question that I should like to mention in passing. Again and again, when I have been eating even in the finest hotels, where the most elaborate food service has been provided, I have heard people complain that nothing tasted "good" to them. In other words, they had so overfed that they had lost the pleasure of eating. To the healthful person, every mouthful brings its own distinct sensation of delight, and the last mouthful is just as delicious as the first. No person can be said to be in a normal condition of hunger unless this is his experience. To those who have lost this constant pleasure and who have to stimulate the appetite with sauces, condiments and the like, I would strongly urge a short fast, if for no other reason or higher motive than to restore the pleasures of normal hunger. Where one eats with



A photograph of Charles Courtney Haskell in his seventy-first year.
Well known exponent of fasting and other natural methods of curing disease.

a healthful desire, everything is sweetened and made deliciously palatable with *hunger sauce*—the best condiment and palate stimulant the world has ever known. Not only are the pleasures of the table enhanced after such a fast, but the food eaten under the new conditions seldom produces nightmare or disturbed sleep.

Over-eating has become a vice of enormous prevalence, and for millions a protracted fast would prove a specific for the cure of ailments that defy medication. Diarrhœa, for instance, admits of no readier or more harmless remedy. It is a result of dietetic abuses and Nature's usual way to evacuate irritant substances—often accumulations of indigestible food threatening to become virulent under the influence of a high temperature.

A day's fast would mitigate the trouble. Two days of total abstinence would generally cure it and leave the condition of the alimentary organs improved in every way. But the patient cannot wait. Instead of earning the right to health he wants to buy it ready-made over the counter, and applies to a drug-monger. Loose bowels indicate a deficiency of vital strength, yet nearly every debilitating poison of the vegetable and mineral kingdom has been employed to paralyze the activity, and, as it were, silence the protest of the rebellious organs. Bismuth, arsenic, calomel, opium, mercury, nuxvomica, zinc salts, acetate of lead and nitrate of silver are among the gentle "aids to Nature" that have been prescribed to control the revolt of the mutinous bowels.

To the thinking mind this deliberate paralyzing of the bowels is manifestly unnatural and therefore dangerous and injurious. The perfect and proper relief comes from the simple natural plan of giving the overworked organs a rest, and this the short fast readily accomplishes.

I have already shown the folly of the shibboleth, "You must eat to keep up your strength." This fosters the idea that you must tempt the appetite of the invalid in spite of the foul breath, coated tongue and repulsion for food that the patient exhibits, and that one would think would be

enough to convince a person with the slightest modicum of intelligence that the body was craving for a rest from all food. Yet he will insist that it is injurious for the body to fast; that if you do not put food into the stomach, the gastric juices will soon eat away the stomach; that when you fast for any length of time you begin to feed upon your own tissues, to "gnaw your own bones"; that "a fasting man feeds upon a very unnatural dietary, his dietary consists wholly of flesh, hence he is carnivorous, and worse than that, it is human flesh, so in a certain sense he is a cannibal"; that "from a hygienic standpoint one might just as well subsist upon the flesh of another person as upon his own flesh"; that, "the faster at first consumes the fatty or adipose portion of his tissues. When this is gone, other structures—the muscles, liver, brain and other tissues—surrender their substance to maintain animal heat and supply the energy required to sustain the action of the heart and other vital organs. Thus not only the residual tissue or stored food of the body is utilized, but that the framework of the structure itself is consumed, and may thus be considerably impaired, or even irreparably damaged, cannot be doubted"; that "there is great danger from the suspended action of the bowels during a fast, owing to the retention of the intestinal secretions"; that "food must be taken at regular intervals in order that the food residue may sweep away the poisonous and offensive secretions of the intestines." These are some of the so-called scientific objections urged by the medical profession against fasting.

Let me now briefly reply to these objections. Experience is the best teacher as to whether fasting is a natural process or not. No natural process can be injurious. In the thousands of cases that have come under the observation or direction of hygienic teachers, there is the first case to be found where wise and judicious fasting has produced injury. As to the gastric juices eating the stomach of the faster, this is a pure bogey of the imagination. Even in the case of people who have died of starvation, there has been nothing to justify this assertion. The fact is the body begins to feed upon its own

fat first, and in these cases of starvation, where careful scientific observation took note of all the conditions both before and after death, it was found that 91 per cent. of the fat of the body was consumed; 30 per cent. of the muscle; 56 per cent. of the liver; 63 per cent. of the spleen; 17 per cent. of the blood, and absolutely nothing of the nerve centers. The consumption of fat and muscle could occur at any time and the person preserve practically his normal health and vigor. The loss in the liver and spleen was more in the liquids than the solids, and the reduction in the amount of the blood not in itself serious. The stomach was found absolutely uninjured, and nothing more betrays the ignorance of the ordinary physician as to the effects of fasting than such foolish remarks as that the stomach will feed upon itself if no food is provided for it.

The one remarkable thing about these medical records is generally overlooked. It is that, provided the nerves can have rest and sleep, they seem to maintain their substance during even the most prolonged fast without injury. How they are fed, we do not know. Experience and observation teach that during the fast the nerves maintain their ability and power to direct and control the operations of the body just as much as when the usual amount of food is eaten.

It is to this self-acting power and law of self-preservation that the faster owes the direction of the forces that operate for his benefit. The nerves seem to direct the processes of disintegration and seize those tissues that can most conveniently be spared for the sustentation of the faster's body. For, as I have elsewhere shown, the fat disappears first, and then other tissues in the inverse order of their usefulness and importance to the carrying on of the functions of the body.

THE DIFFERENCE BETWEEN FASTING AND STARVING.—From what I have said, therefore, it will readily be apparent that fasting assuredly does not mean the same as starvation. In *fasting*, the body merely subsists upon its surplus accumulations, and upon the tissues up to a point at which it would be impossible to abstain from food further without actually de-

priving the body of the means of sustaining life. As a general thing one can fast for a number of weeks before he reaches the point at which starvation begins. One will *starve* when the body is in actual and direct need of food or of some special elements without which life cannot be sustained. As a matter of fact, many people undergo a process of partial starvation even though they may eat in great abundance of a one-sided diet, which perhaps contains a surplus of some elements, but a deficiency of others. The deficiency of the latter will result in what might be termed partial starvation. If these same elements were entirely lacking a man could not live even though he had the privilege of eating great quantities of some other elements. In some cases an individual actually grows stronger during a fast, but if he continues to fast indefinitely he will finally reach a point at which starvation begins. This, however, will in most cases not occur until practically all of the fatty tissue and much of the muscular tissue of the body has been consumed, as well as some of the other tissues as of the liver and spleen. As a general thing the brain is sustained and nourished on the wasting tissues of the body to the very last. Fasting is particularly valuable in cases in which the digestive system is disordered or in need of a rest and the blood is charged with impurities.

To sum up, therefore, one may fast for weeks without starving, though of course if the fast is continued too long starvation will begin. When the heart-beat becomes alarmingly slow and one becomes exceptionally weak, it is time to stop fasting. It is important to remember that this point will be reached in some individuals long before it would be in others.

The ordinary physician prefers to keep his patients in ignorance of the processes by which he hopes to accomplish a cure. He writes his prescriptions so that laymen cannot understand them. Everything is mystery. His phraseology is in long syllabled words which convey no meaning whatever to the lay mind. He speaks of *aqua pura* when he means water, and he looks wise and says that a little *chloride of sodium*

might be beneficial, when he means a pinch of salt. Whether it was deliberately designed by the founders of medicine to make so profound a mystery of it as to fill the lay mind with awe at the stupendous knowledge of the members of the profession, I am unable to say, but it unquestionably has acted in that manner from the earliest days even until now. The more popular and expensive the physician, the more mystery and complexity, as a rule, he will cast around his profession. There are solemn waggings of the head, and Ums! and Ahs! as the patient details his symptoms. There are more ponderous waggings of the head and serious looks as he asks questions. If he deigns to pronounce his diagnosis, it is in weighty words made up of ponderous syllables. There is more mystery and conjuration when the remedy is prescribed, and from the beginning to the end the whole process is made as mysterious and complex as possible.

On the other hand, fasting is exceedingly simple. It requires no knowledge to fast, though one must have determination and strong will, and when the fast is broken, use both self-denial and reason not to eat too heartily and of too solid and concentrated food. The physician is scarcely to blame for defending his profession to the best of his ability, consequently he not only knows nothing about fasting, but as a rule, he does not want to know. Why should he? His business is to prescribe medicine and to cure disease in accordance with certain principles laid down by the school to which he belongs. He has no more desire to step outside the boundaries of his professional teaching than a Chinese Mandarin has to extol another philosophy than those of Confucius and Mencius.

Upton Sinclair very forcefully states the general attitude of physicians upon this question of fasting. After referring to his experiences with the newspapers he continues:

“Equally discouraging, it seems to me, was the attitude of physicians, as revealed in the correspondence that came to me. We have about a hundred and forty thousand regularly graduated ‘medical men’ in this country, and they are all of them presumably on the alert for new ideas in the curing

of disease. Certainly an experience of the sort that I narrated, written by a man of some prominence, over his own signature, and backed by references to other cases, might have been expected to awaken the interest of a good many of these professional men. Out of the five or six hundred letters that I have received, just two, so far as I can remember, were from physicians; and out of the hundreds of newspaper clippings which I received, not a single one was from any sort of medical journal. There was one physician, in an out of the way town in Arkansas, who was really interested, and who asked me to let him print several thousand copies of the article in the form of a pamphlet, to be distributed among his patients. One single mind, among one hundred and forty thousand, open to a new truth!

“Not so very long ago I saw a report in some metropolitan newspaper to the effect that the medical profession was greatly alarmed over the decrease in its revenues—it being estimated that the income of the average physician to-day was less than half of what it had been ten years ago. All this, I think is directly attributable to the spread of knowledge concerning natural methods in the treatment of disease—and, more especially, of natural methods in the preservation of health. Only the other day I was talking with a friend who was a teacher in a small college in the Middle West. There was a physician regularly employed to attend the girl-students, but several of the teachers became interested in the fasting-cure, and whenever they learned of any illness would go to the girl and start her on a fast, and, as a result, the physician lost considerably more than half of his practice. In the same way, I myself recently started several people in a small town to fasting, and every time I saw the local physician driving by in his carriage I marveled at the courtesy and cordiality he displayed; for before I had left that place I had cured half a dozen of his permanent customers—people to whom he had been dispensing pills and powders every few weeks for a dozen years.

“Bearing these facts in mind, what intelligent man would

go to a physician and ask him anything about fasting? If the physician consulted has been broad enough and wise enough to study fasting—even though he may not have experimented upon himself—if he has honestly studied the literature of the subject and watched the effect in a number of cases, his judgment is then entitled to due consideration, but to consult the ordinary physician on fasting is as unreasonable as it would be for the lamb to consult the wolf as to the righteousness of flesh eating, or the deer to ask the tiger if fruit and nuts were not the only natural food. In this matter, as in everything else, one must use his own intelligence and rely upon his own observation and judgment. If the naturalness of fasting appeals to your own common sense, then try it. Why consult anybody? Your judgment is as much to be relied upon as that of the greatest physician that ever lived. Truth, Nature, needs no other authority than itself; it is higher than all authority. Everything that is natural is true, and truth is natural. If, therefore, you follow truth and Nature you are following higher authority than that of any man living.”

MY FIRST SEVEN-DAY FAST.—The description of my first fast of seven days will probably be of interest to my readers.

During the previous fifteen years I have frequently fasted as a cure for threatened illnesses that attack even the most careful in this age of civilized or rather uncivilized dietary.

I have been seriously threatened with pneumonia and numerous other ills of less importance which have quickly succumbed to this effective means of ridding the system of impurities. Though there are now some valuable works on this subject, when I first adopted these theories, they were based entirely on my own conclusion and instinct and the well-known fact that all animals fasted when ill.

Until this last experiment I never fasted over four days, and even then I usually ate an apple or a bite or two or something light each day, thus at no time previous to this last experiment did I fast absolutely.

I have frequently made comments on the value of fasting in *Physical Culture*, and determined to test the effects of

an absolute fast of one week on strength and weight. I did not take a particle of nourishment in any form, though drank freely of pure water.

The first day of the fast, I lost five pounds and the next day two pounds. The loss gradually decreased each day, and on the seventh day was but little over one pound. Altogether in the seven days, my total loss of weight was fifteen pounds.

My loss of weight was far greater than is usual when one is fasting. This was caused by the great amount of exercise that I took daily. In fact I lost about as much weight in this one week as one would ordinarily lose in two weeks if no exercise was taken.

Each day I walked about ten miles, and as is often the case, felt weaker the second day of the fast than at any time thereafter.

I always took my walk in the morning immediately on rising and usually felt weak at the start. This was however entirely abnormal for after traveling one or two miles, the feeling would entirely disappear and I could walk with a strong steady tread, and at the conclusion always felt equal to ten or twenty miles more.

Frequently when rising from a seat after a short rest I would feel quite dizzy for a few moments, but this would quickly pass away.

The first four days were the most uncomfortable. I did not seem especially hungry, but I was languid, except for a while after exercise, at which times I always felt strong and energetic.

I attended to my daily duties during the entire fast with the same regularity as usual. My brain seemed especially clear, and mental work actually required less effort than when eating regularly.

At times difficulty was experienced in inducing sleep. The gnawing sensation in my stomach would not cease, though a plentiful supply of cool pure water seemed of great advantage, and was of valuable assistance in wooing slumber.

The sixth and seventh days of the fast were really by

far the most comfortable. I felt that it would require but little effort to continue on for three or four weeks, but the object of the fast was accomplished and I was not at all anxious to continue it further.

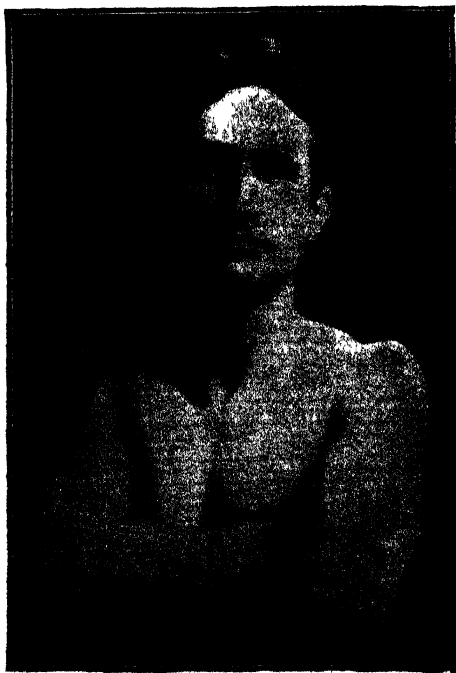
The most important feature in lessening the effects of fasting is to keep the mind employed so one will not be continually referring to the desire for food.

The only time there was the slightest danger of my giving way to appetite was on the fourth day. At this particular time I mention, there was nothing of importance for me to do, and after conversing a short time with some friends, I went out with the distinct intention of patronizing the nearest restaurant.

After walking a short distance and giving the matter serious consideration, I determined not to break the fast and instead of the restaurant, I visited a gymnasium and spent thirty minutes in vigorous exercise, and in consequence felt



Appearance of face at the close of a seven days' fast.



Condition two weeks after breaking fast of seven days' duration.

much better, and all thoughts of giving up the fast were abandoned.

The comparison photographs show how the body wasted away during the fast. The face thinned especially and the eyes sunk considerably.

The remarkable feats of strength performed on the seventh day of my fast are described in the paragraphs headed "Work During the Fast." This should be carefully read in connection with the foregoing statements, for, when the experiences of others in the same line are remembered, it will conclusively show that the eating of three meals a day is not an essential to the putting forth of great muscular energy.

After the fast I have described here I made the mistake of eating too heartily on two or three occasions and I am now quite satisfied that much harm resulted thereby. On the second day after the fast I ate three hearty meals, when one hearty meal would have been sufficient. This was, as before mentioned, the first fast of this duration that I had ever gone through, and I was not prepared to meet conditions with which I was not familiar.

Unquestionably it would be better in experimenting with fasting to start by fasting one meal or say one day at a time. The result of this will give you confidence in its benefits, then you can gradually advance into a full-fledged convert. The principal result of value in such a conversion will be from that day forward *absolute independence of all advisers, medical or otherwise, upon an ailment of any kind that attacks you.* Fasting will be at once the principal part of your self-treatment, and forever thereafter your stomach will be free from the drug habit.

FASTING FOR CHILDREN.—I wish I could impress upon the hearts and minds of parents the incalculable benefits of fasting for children. Take any of the ordinary ailments that afflict the young, whether they are in the cradle or old enough to be called young ladies and young gentlemen, and attend the high school. If parents had the courage and wisdom to stop the giving of all food the moment they observed the first

symptom of any disease, the trouble would disappear almost as quickly as it came. It matters not what the disease is, whether measles, sore-throat, headache, indigestion, even scarlet fever or diphtheria, the fast will invariably produce a rapid cure. The child will need no drugs, and certainly no anti-toxins, to combat the disease. Give him plenty of water to drink, and *absolutely nothing but water*, and leave the curative powers of the body to do the rest. There is no miracle greater than this; no wonder more astonishing and certain in its results. There need be no fear, and after you have tried it once or twice you will laugh that you ever had any fear of an evil result from fasting.

Of course there may be cases, if an acute disease is allowed to run too far under the ordinary drugging treatment and feeding of the patient, where death cannot be arrested, even by fasting. Necessarily one must be fair and honest in judging of the results of fasting in a case of this kind. With a child who has not had an opportunity to injure his body by vicious procedure, there is no danger whatever from a fast, provided it is taken in time and the body has not been vitiated by poisonous drugs in a vain attempt to arrest the natural course of the disease.

One of the prevalent notions of the civilized world that has caused untold and unnecessary misery is the belief that children must go through a course of what are called infantile diseases. To me such an idea is absolutely infamous. Without any hesitation or equivocation I pronounce the idea as idiotic as it is false. There is no more need for a child to have a disease than there is for a man to have his right leg cut off. It is no more necessary for children to have the measles, scarlet fever or whooping cough than that a decent man should have an attack of desire to be a burglar, a sneak thief, or a murderer. Even though a child is not born of absolutely healthy parents, the constant aim of Nature is to give every one of her children a fair chance and to endow the little one with the health its parents had not given it.

But, unfortunately, side by side with the false conception

that children must have a run of so-called infantile diseases is the equally false and erroneous idea that children must be fed every ten or fifteen minutes in order that they may rapidly grow and gain strength. The stomach of a new born child will hold but a few teaspoonfuls. This is a clear indication from headquarters as to the amount of food a child should be allowed to receive. As the stomach rapidly increases in size and the flow of the mother's milk increases, the amount of the food that the child receives likewise should be increased.

Nature also indicates clearly that during the first three days of the child's life no importance need be attached to the subject of food. For, as every physician and nursing mother well knows, there is no secretion of milk until the third day after birth. The fluid that the mother's breast secretes is known as the colostrum. This fluid is intended to help the child get rid of the black, tarry-like substance with which its intestines are lined at the time of birth. For the first three days no food is required by the child. If it is a lusty youngster it may rebel against this dictum of Mother Nature. But, as I have so often affirmed, I am prepared to swear by the natural processes as against all the wisdom of men, nurses, women and the crying of babes. To quiet the child give it a teaspoonful or two of cold water, every hour or so, and in a short time its crying will cease. With a mistaken notion of the necessity of food, however, in their minds, too many mothers and nurses begin to ply the child with some kind of food, even before the bowels are thoroughly cleansed.

Then they keep up the feeding, giving the child the breast or the bottle at every slightest whimper or cry. The result is the child's digestive apparatus is demoralized from the very hour of birth. The stomach is unduly distended, the appetite is allowed to gain the upper hand and before the child has attained the ability to stand alone, this cruel kindness has fastened upon it a habit that will require much pain, suffering and determination to dislodge. No infant should be fed oftener than every two hours, and from the first day of its life should never receive food during the night.

If it awakens and cries, and there is no other cause of disturbance, a spoonful or two of cool water will satisfy its demands and it will invariably go off to sleep immediately. These simple statements may not appear important enough to be impressive, yet I am convinced that if children were brought up in accordance with them, nineteen-twentieths of the sickness of the world would never come into existence, for it is the formation, even in babyhood, of the evil habits of uncontrolled appetite that leads to all the diseases consequent upon the unbridled and uncontrolled indulgence in food.

Unfortunately, but few of the children of to-day have been brought up under sane and healthful plans. Most of them have been gorged at such frequent intervals that there is no remnant of naturalness or normality in connection with the whole function of eating and its consequent digestion. Hence, infantile diseases are still prevalent, fostered by the idea that one must expect them. But as one watches the influence of fasting upon children, he soon begins to realize that nearly all infantile disorders are connected with incorrect feeding, and how easily they yield to the beneficial influences of the fast. For while the formation of the evil dietetic habits to which I have referred undoubtedly affect children seriously, they have not yet branched out and formed unnatural habits in other directions, and, therefore, disease in them yields very readily to the natural treatment of the fast.

There is a phase of this belief in the naturalness of infantile disorders, however, that, under the conditions, is justified. I have already presented the idea that to many people will doubtless appear strange and startling, namely, that disease is a beneficial provision of Nature for the purpose of eliminating conditions that if allowed to remain will cause chronic ailments and ultimate death. With this statement in view, it can be seen that the diseases of children are a natural expression of the resentment of the body against unnatural and artificial conditions forced upon it. If children lived naturally, diseases would not appear, but as they are forced into improper modes of living, disease should be regarded as sentinel warn-

ings admonishing the parents to desist from the wrongful life that they are endeavoring to force upon their helpless offspring.

WHEN NOT TO FAST.—There are some diseases in which I have found long fasts of questionable value. These are the cases that can be called consumptive or catarrhal. Experience has shown that in these forms of disease the vitality is often so low as not to allow the patient to withstand the demands made upon the body by a prolonged fast. When vitality is so depleted it is better to progress slowly, and in such cases I invariably suggest a series of brief fasts, rather than one or more long ones. The reason for this will be self-evident to those who give the matter a little thought. If from an exhausted body is taken away, by the process of a fast, the little energy that does remain, the danger line may be reached over which it would be perilous for the invalid to pass. On the other hand, a fast of a day or two will give a short interval of rest to the digestive organs, and at the same time allow the energy of the body, hitherto expended in digestion, to go to the eliminative organs, for the purpose of throwing out disease. Then, a little easily digested food may be taken after which another short rest should be given to the digestive organs.

I have known a number of cases where consumption had actually appeared in its earlier stages in which fasting has been of benefit. I have known of other cases where fasting had been adopted that the weight was greatly decreased thereby and the patients were unable thereafter to regain the weight they had lost. I must admit that in many cases the failure to regain weight was due largely to want of knowledge of diet, but at the same time it often seems to be difficult to regain weight that has been lost when one is suffering from a tendency towards tuberculosis.

A fast is not by any means indicated in all cases of disease. If one is over-feeding continually, trying to force food upon the body with a view of adding strength, he is actually suffering because of excess in feeding; certain poisons have accumu-

lated in his blood that are destructive in their influence. Naturally, under such circumstances, such a one would gradually grow stronger if food were entirely withheld. If, on the other hand, one is eating very lightly and has been following this régime for a prolonged period, through having digestive or other troubles, and is exceedingly emaciated, then the fast must be used with the greatest degree of caution. To be sure a fast of two or three days might be of value to give the digestive organs a rest, with a view of assisting them properly to assimilate the diet which would be indicated under such circumstances, though I would not advise a fast beyond this period. What cases of this kind need is a regimen directly the opposite of fasting, but the food should be selected with a view of giving the patient the greatest amount of nourishment with the smallest expenditure of digestive energy. In other words, a diet should be prescribed that would be easily digested and assimilated. The milk diet would be indicated in most of these cases, though in some instances the vitality has been so depleted that even milk cannot be digested. And it is well to remember that there are periods when the vitality becomes so depleted that nothing can arouse the life-forces to the activity which is essential to ward off impending disaster.

When one is at all doubtful about the benefits of a fast, it is far better to test it in the manner that I have suggested in the chapter on Short Fasts before attempting prolonged abstinence.

Wasting diseases, and especially those of a tubercular nature, require treatment directly opposite to fasting, though of course feeding is of little or no value, as has been reiterated again and again, unless the food can be assimilated. Therefore simply for the purpose of giving the digestive organs a rest, that they may be clearly capable of absorbing the nourishment that is taken, a short fast is recommended. These short fasts, as previously mentioned, do not actually waste the tissues of the body. They simply, to a certain extent, allow the cleansing of the alimentary canal, and make the various absorbing glands greedy for nourishment. The work of select-

ing material for blood making, under such circumstances goes on much more perfectly, and the quality of blood is improved greatly thereby.

In a general way, therefore, I would say, do not fast for a prolonged period if your weight has been greatly reduced below normal. Do not fast more than from two to five days if your vitality is already greatly depleted. A fast beyond from two to five days begins to use up the tissues of the body, and when one is emaciated these tissues have already been "used up," and therefore fasting should be used only as a brief digestive rest, as previously suggested. When fasting is continued for a prolonged period under such circumstances it further reduces the vitality of the patient, and instead of being a body-cleansing process, the energy that is necessary for metabolism (or tissue changes) is not furnished, and the body actually accumulates impurities instead of having the eliminative processes accelerated.

THE LONG AND THE SHORT FAST.—There are two methods of taking a fast, a long fast, and one or more short fasts. Those who maintain that the long fast is the better method, make no statement as to the length of time required. They claim that Nature herself determines the length of time that the fast should continue, whether it be a week, a month, two months, or longer. They claim that the fast should continue until the return of simple and normal hunger, the signs of which are unmistakable, and are as different from the ordinary cravings of appetite as the light of the sun is different from the tallow candle. Such fasts have continued as long as seventy-five or ninety days.

In the ordinary ailments I believe, as a rule, it is better to fast until all the disease is eliminated and normal hunger returns. Then the fast can be broken with fruit juices and the more easily digested foods until normal habits of living and diet are resumed. In chronic ailments, however, where there is depleted vitality, and especially where the patient is not mentally satisfied to take a long fast, I believe a series of short fasts will accomplish the same results without this mental

disturbance. Necessarily the time required is much longer, as after a fast of a few days, say three to seven, the patient resumes his diet. If he be wise, he will allow himself to be advised as to a limited and specific diet during this period which should last as long again, possibly, as the time of the fast. He then resumes his fast, continuing it as long as he is satisfied, breaking it again as before. Thus, by alternately fasting and eating, the disease is eliminated, the body purifies itself, the functions are restored to their natural and normal action and, by way of confirmation, abnormal appetite is banished and normal hunger returns.

Upton Sinclair sums up the relative merits of a long and short fast in an admirable way, as follows:

"The question most commonly asked was how long should one fast, and how one should judge of the time to stop. I personally have never taken a 'complete fast,' and so I hesitate in recommending this to anyone. I have fasted twelve days on two occasions. In both cases I broke my fast because I found myself feeling weak and I wanted to be about a good deal. In neither case was I hungry, although hunger quickly returned. I was told by Bernarr Macfadden, and by some of his physicians, that they got their best results from fasts of this length. I would not advise a longer fast for any of the commoner ailments, such as stomach and intestinal trouble, headaches, constipation, colds and sore throat. Longer fasts, it seems to me, are for those who have really desperate ailments, such deeply-rooted chronic diseases as Bright's disease, cirrhosis of the liver, rheumatism and cancer.

"Of course, if a person has started on a fast and it is giving him no trouble, there is no reason why it should not be continued; but I do not in the least believe in a man's setting before himself the goal of a forty or fifty days' fast and making a stunt out of it. I do not think of the fast as a thing to be played with in that way. I do not believe in fasting for the fun of it, or out of curiosity. I do not advise people to fast who have nothing the matter with them, and I do not advise the fast as a periodical or habitual thing. A man who has to fast

every now and then is like a person who should spend his time in sweeping rain water out of his house, instead of taking the trouble to repair his roof. If you have to fast every now and then, it is because the habits of your life are wrong, more especially because you are eating unwholesome foods."

As a rule a long fast will not require over thirty or forty days. One's ability to continue the fast will depend largely upon his weight; in other words, upon how much stored energy he has deposited in his body. The descriptions of the various fasts that have been given contain very valuable information for anyone who desires attempting a long fast. A long fast must not be attempted unless one is entirely satisfied that it will be of value to him. When there is the least hesitancy as to the value of the fast it is far better to try one or more shorts fasts. Then should it be necessary to use the long fast, one can follow it with the confidence born of experience. The details of the symptoms that appear during a long fast can be learned from the various experiences elsewhere given in this volume. Under the heading "Danger Signals in Fasting" will be found information as to possible dangers when continuing the fast. As a rule it has been my policy to break the fast when the patient feels that he is not strong enough to walk around. If the fast has so weakened him that he becomes bed-ridden, I am of the opinion that even though he be desirous of continuing the régime, some little nourishment should be given in the form of fruit-juice, for the purpose of creating enough energy to enable the patient to be out of bed. One should remember, however, that frequently during a fast, the feeling of weakness is a false indication. One may awaken in the morning, for instance, feeling weak and dizzy; sometimes be almost incapable of standing up, but by using a certain amount of will power, compelling himself to stand up and walk around, the activity of the functional system is aroused and ordinary strength reappears. I have known cases on a long fast where the patient found it difficult even to sit up, but by taking a few breathing exercises, and by repeated attempts to rise, the strength gradually returned,

and in some instances it appeared to such an extent that miles could be walked thereafter with little or no fatigue.

Remember that the weakness that appears during a fast is simply indicative of functional inactivity. The functions that are ordinarily accustomed to carrying on their processes in a vigorous manner are unable to secure the energy that they need for this purpose and they gradually become sluggish. But with the mechanical stimulation that comes with exercise, and the awakened vitality, they resume their offices. Impurities that have accumulated in the blood are then quickly eliminated; the brain clears and the body resumes its normal strength.

I have always preferred not to advise long fasts. I rarely use them. I feel satisfied that many deaths have occurred from long fasts which might not have occurred had the cases been treated with a series of short fasts. This, however, is merely my opinion, and may be inaccurate. The statements made by Dr. Dewey and other experts that whenever a patient dies, even in a prolonged fast, some serious disease exists and there would have been no possible chance for recovery no matter what treatment had been adopted, may be absolutely accurate. The fact that among the thousands of patients that I have personally advised, not one death has occurred, would indicate that the short fasts can at least be safely used in all cases. It is not especially difficult to understand the signs that clearly indicate that a fast has been continued "to the finish." The coated tongue gradually clears up and becomes pink and almost red in places. The breath becomes sweet and clean. Abnormal craving for food will disappear and in its place will come the natural desire for some wholesome article of food. As a rule this desire can be satisfied to a limited extent. Even in such cases, however, I am inclined to believe that our method of breaking the fast first with fruit-juices then with fruit and milk, is far better and safer, especially when one is breaking a long fast. This method of breaking the fast is explained in detail in another chapter.

THE SHORT FAST.—The short fast is applicable in all

cases and under all circumstances and conditions. A healthy person can take a fast of a meal or two with material benefit, especially if he is accustomed to eating heartily. The short fast is the best means of testing the fasting method. If one feels that he needs a fast and is afraid to start on a lengthy one, he can start by leaving out one meal. If he feels the craving for food will be too much for him then he can drink one or two glasses of very hot water or slowly sip a glass of cold water. If the taste of the water is not especially pleasant it can be flavored with lemon juice, or fruit-juice of some kind. It is always advisable to miss a meal whenever one is not able to enjoy it thoroughly. Do not forget that food must taste good to you, for it is only when it thus pleases you that it properly digests. The tasting of food really comes from the absorption of the nourishment that it contains by the "taste buds" which are located in the back part of the mouth. The ability of these particular tissues to absorb nourishment indicates that the stomach and intestines are in a similar condition; that is, that they can also absorb and be benefited by the particular kind of food you are now enjoying. This should indicate to you, very clearly, the great importance of taste. Taste simply tells you what you need at any particular time.

The greatest difficulty experienced by those who are not familiar with fasting methods is to strengthen the will to the extent that is essential to the maintenance of a fast. One may say, after a hearty meal in the evening, that he will fast all the next day; he has eaten too much; he has a feeling of discomfort because of the hearty meal. He arises the next morning and recalls his determination to fast during the day. Breakfast time is nearly at hand. His determination begins to waver, and finally he concludes that he will try the fast at some other time. A policy of this kind will, of course, make fasting far more difficult. Do not, however, give up after your first failure, but continue with your determination to fast and it will not be long before you will develop the strength of will which is essential. Times often appear when one is really not hungry. He has no especial desire to eat. But it is meal

time and he sits down and takes the food largely from a matter of habit. He does not feel just right unless he follows this particular habit. It is well for all my readers to learn that eating is largely a matter of habit; that is, regular eating. One eats at regular times, and naturally after a while the stomach demands food at those particular times. If one could be so interested in his occupation as entirely to forget meal time, he would go without his regular meal and not notice it. You must remember also that there is what is termed habit appetite. That is, a person will have the desire for food at a certain time, not because there is actual need for it, but simply as a matter of habit. The proof of this statement is found in the disappearance of appetite in many persons if they pass by meal-time without eating. You have often heard a man say, for instance, if he has been compelled to miss his regular meal, that his appetite has disappeared. On occasions the wife will neglect to get the meal on time. The husband comes home and finds when the meal is ready that he is not hungry, and then he proceeds to berate his spouse because of her neglect, maintaining that he had lost his appetite through waiting so long. An appetite lost in this manner is better lost, because it was not real hunger in the beginning; it was simply habit appetite. You can rest assured that when one goes by meal-time and loses his appetite he did not have hunger of the right sort, for real need for nourishment will actually increase with time rather than disappear in this manner.

By far the better method of testing the fasting cure is to begin with one or two days, unless, as I have previously stated, one is *absolutely satisfied* that it is a wise course to fast longer, and, furthermore, that he has the will power to carry it to the finish. Even under such circumstances, if he has had no previous experience, it would be well to test out the fast with two or three short periods of abstinence before beginning a longer period. This advice, of course, is given to those who expect to attempt to fast on their own account and who are not in a position to secure the guidance of an expert.

A fast is usually termed short when it fails to continue to

what we call "the finish"; that is, to that particular period when the tongue clears and other evidences appear which indicate that the body is thoroughly cleansed of all impurities. While we term short fasts those ranging from one to ten days, as a rule they do not continue longer than four to six days. A fast of that period can be continued with little or no inconvenience—in fact, with very little decrease in strength—if one will realize in the beginning that strength is not necessarily secured directly from the food that is eaten, and that weakness is usually caused, not by the lack of sufficient nourishment, but because of the toxic or poisonous elements that accumulate in the blood. For instance, whenever one feels weak, it is not because he needs a meal, if he is in the habit of eating regularly; it is caused by the poisonous effete elements that are accumulating in the circulation. Dizziness naturally may be caused by too much blood pressure on the brain, or the lack of such pressure, but the general feeling of lassitude and weakness is induced entirely by the causes herein mentioned.

One may fast one or two days, and, as previously stated, continue his regular eating habits thereafter with no inconvenience, provided he is careful not to over-eat at first, and he can even continue a fast up to four or five days, resuming eating with care.

A good plan in trying out the short fast is to fast one day and eat two days; then fast two days and eat four days; then fast three days and eat six days, and continue on in this manner to the extent that you feel the fasts are needed in your particular condition, making the eating periods in all cases twice as long as the fasting periods. This will enable you to advance in the fasting idea step by step, and thus become more thoroughly familiar with the symptoms which are likely to develop. Remember while on these short fasts, however, to avoid making any compromise. At this time especially a bite of food will often arouse an appetite that will be absolutely beyond control. For instance, I have been on short fasts and someone has brought in an article of food which he desired to have me test; I would take a bite or two of that food and

it would arouse such an intense craving that I would satisfy that desire in order to avoid having it interfere with my work. Therefore, be very careful not to compromise in this manner. One can take fruit juice while on a fast, and it does not seem to arouse the appetite, but solid food of any kind generally does so, and it should be rigorously avoided if one is desirous of continuing the fast. That is one reason why it is so hard usually to continue on a limited diet. In fact, it is easier to fast entirely than to continue on a diet which is limited to an extreme degree, that is, to perhaps not more than a quarter of the amount that is necessary to satisfy the appetite. The empty and often feverish condition of the stomach occasioned by fasting can usually be relieved with cold water, and if the circulation is especially poor, hot water is sometimes still better. If the symptoms are not relieved by water then you rest assured that fruit juice, prescribed where this particular phase of the subject is dealt with, can be depended upon to bring relief. When one finds it difficult to continue the fast, then fruit juice is especially valuable, as it frequently takes away the abnormal cravings and general feeling of discomfort that come with an empty stomach; it not only gives the stomach something to work upon, but it has a cleansing and quieting effect upon the organ and is of material advantage.

✓ What is most necessary to keep in mind, however, is the satisfied mental attitude. One should simply say to himself that he is going to fast and that he does not intend to allow any influence to divert him from that purpose. It is not an especially good plan for one to say that he is going to fast for a certain number of days, unless he feels fairly well satisfied that he can carry the fast to the end. It is better simply to fast from day to day, and at the end of each day resolve to continue another day, and thus keep on extending the fast as long as he feels it is of benefit to him.

Naturally, in a thorough survey of the whole question of fasting, all our dietetic habits come under review, hence it is appropriate that I devote a few words to the number of meals eaten daily. This phase of the subject has been fully

treated in Vol. I, under Diet. Here I shall show their relation to fasting.

Where one is habituated to eating three meals a day, regardless of either hunger or appetite, he becomes enslaved to the habit. No such person can long be healthy. The stomach and alimentary canal are bound to become weakened and diseased. As I have repeatedly stated, no food should be eaten unless there is a distinct enjoyment in the eating; and it is equally important that one should never compel himself to eat against his desire.

However, it does not follow as an invariable rule that appetite is a safe guide, for most of us have had abnormal appetites developed in us. A fast is the grandest thing in the world to free us from this enslavement of appetite-habit. And the best way to begin is to cut off one meal a day—say breakfast—until the clamor of habit-appetite is silenced.

I think no more of missing one meal, two, or three, than I do of eating an extra mouthful when I am enjoying a meal, and I suffer positively no discomfort whatever. This is as it should be. If you cannot miss one of the regular meals to which you have been accustomed without distress and discomfort—headache, nervous irritation, or nausea—rest assured you are not in a healthy condition. You, not your stomach and appetite, should be the master. And this is a mental as well as a physical slavery. Get free as soon as you can.

Experience demonstrates that habit makes abstinence from food easier than it is to eat at meal times when you are not hungry. Learn, then, to go without breakfast, and see what its effect will be. And, by the way, look for a moment at that word "*break fast*." How much of a fast has there been to break when one eats a hearty dinner at six, goes to the theatre or concert, takes a supper afterwards in order "to help me to sleep," and then feels he must eat again at 7:30 or 8 in the morning? The undigested mass of his last night's dinner and supper are still in his intestines, generating poisons which the blood carries to all parts of the body as disease and

discomfort breeders. Hence to such a man the word breakfast is a misnomer. There has been no fast to break.

Get rid of the idea that three meals a day are necessary for health and strength. Two meals are enough for any one, except those who are doing the most arduous physical labor out-of-doors, and even these would be better on two meals if they were trained to it in early life.

When you get up in the morning you really do not know whether you are hungry or not, especially if you are not in good physical condition. When you arise your stomach often contains an accumulation of phlegm or mucus. Sometimes there is a burning sensation; your stomach does not feel comfortable, but you eat breakfast—not because you want it, but because it is breakfast time. And you do not feel much better after, than you did before, breakfast. If you will wait a while to develop an appetite it will tell you what to eat—wait until twelve or one o'clock and then your appetite will tell you pretty accurately what you need. If you follow a regimen of that kind your abnormal appetite will change into healthful desire and then you can safely follow your instincts as to what foods you shall eat. Our food instincts have been deadened and perverted until they have almost disappeared. We think we know so much more than the lower animals. We pride ourselves upon being that superior creature, man, and in our suffering and physical weaknesses and diseases we see the terrible results of substituting abnormal appetite for natural instincts. If we would only follow that valuable guide, instinct, we would be in better health. I earnestly recommend to those who have not tried the two-meal-a-day plan, give it a trial. It is over twenty years ago since I adopted it.

At that time I was actively participating in athletic sports, and I had not followed that policy for over a week when I was amazed at the change in my physical condition. My endurance increased, I had more vitality and I gained a normal hunger. When you get up in the morning and eat before you have moved around and exercised you know nothing of this normal hunger. You may have a craving, but if

you go out and walk two or three miles and exercise, that craving disappears, proving that it was false; and when you eat at the dictates of an abnormal appetite, you go on from bad to worse. You go through life eternally "doped." You might just as well be on an eternal drunk, you are not drunk with alcohol, but doped with food, and consequently you are neither physically, mentally, nor morally the man you might be and ought to be. I shall never forget the influence upon my mind when I adopted the two-meal-a-day habit. I began to be a student of everything, I began the questioning habit, I began to seek every item of information I could gain on the subjects in which I am so intensely interested. So let me urge again upon my readers that they lessen the quantity of food they eat. It will clear your brain, give you a clearer insight into life, give you brighter possibilities, give you a stronger body, a more normal body, give you the ability to drive away all fear of acute ailments and add marvelously to the joy and capacities of your life.

For when I assure my readers that some of the most hard-working men I know seldom eat more than one meal a day, that they are men who conduct large enterprises which require great muscular as well as mental activity, it will be seen that it is not necessary to eat large amounts of food in order to keep up bodily and mental vigor to the highest degree of efficiency. Indeed, one of the lessons the American people most need to learn is that they can reduce their food more than one-half not only without injury and loss of power, but with the most beneficent results, and to the startling increase of all their powers.

THE YEARLY FAST.—I have already shown in the case of the great Italian, Cornaro, that, as he grew older, he practically fasted for about two months prior to the coming in of the new grape crop. As a result of several yearly experiences I have come to the conclusion that it would be well for most people to adopt this custom. Just as the early day Catholics used to fast for religious reasons, so would I urge upon people to-day to fast for the physical, mental and spiritual benefits

that would arise therefrom. I know a large number of cases where people have formed this habit of indulging in an annual fast, which varies from several days to a month or more, and they invariably declare themselves benefited in every way by this season of self-denial and abstinence from food. If it did nothing more, it would be a good thing annually to remind the appetite that it is not master of your life. At the same time the physical demonstration that the body can proceed to perform all its wonted labors without diminution of vigor or efficiency, when no food is eaten, is itself a yearly incitement to the guarding of the appetite and is a valuable suggestion against over-eating.

FRUIT FASTS.—While I have shown that the term fast is a misnomer when any food, either liquid or solid, is taken into the body, the word is still used, however, to designate either a partial fast or the abstinence from all but one specific kind of food. Personally I prefer to use the word “diet” instead of “fast” to express this exclusive and restricted form of diet. But as the term “fruit fast” has become generally known, I wish to give a few helpful hints in regard to this kind of diet. The term “fruit” is a very elastic one and includes a vast amount of food material of varying nutritive qualities. It is well to state I shall use the term “fruit” in its broadly accepted sense, entering into no merely academic questions as to whether watermelons are fruits or vegetables. In what I shall have to say, I shall treat all food of this nature as fruits.

For full details of the “Fruit Fast,” the reader is referred to Chapter VI of this volume, in which are given fasting regimens of various sorts. Instructions for the use of these fasts will appear in the chapters of this work to be devoted to the treatment of all common diseases. Detailed instructions for the most important forms of partial and complete fasts will appear in these chapters.

Some fruits are valuable more from their refreshing qualities than for any great nutritive value; as even these fruits, while not containing much flesh-forming material, are still exceedingly valuable as food in that they supply various

salts and acids that are distinctly required for the preservation of the body in the most perfect health. On the other hand such fruits as the banana, the fig, the date, the cocoanut, the sweet dried currant of commerce, the raisin, the banyan, etc., are substantial articles of diet upon which one can subsist.

THE EFFECT OF THE MIND IN THE FAST.—There is no doubt that the greatest objections to fasting come from the dreads and fears of unknown evils that may result therefrom. We have been so wrongly educated that, instead of being taught to eat less and fast more, we have learned to have a fear, an abnormal dread, of some trouble that may happen to us if we fast. There never was a greater mistake. In thousands of cases that have come under my own observation, I have seen absolutely nothing but good. The horrible stories of men who have been starved to death as a result of accidents in coal mines, shipwrecks, etc., have been caused far more by the natural fears and dreads than by the abstention from food.

Reader, if you are suffering from either an acute or chronic disease of which you wish to rid yourself, the first and best thing you can do (unless your body is too far enfeebled) is to understandingly lead your mind to see the rationality and wisdom of fasting and then as quickly as possible begin the actual experience of the fast. It is a natural method of cure. Nothing natural can be injurious. The experiences of thousands who have fasted from one to ninety days have demonstrated that there is nothing to be afraid of. Master your fears, resolutely control your abnormal appetite, summon your will, be a man, a woman, and fast.

The chief difficulty is to satisfy the mind. You must first of all be thoroughly convinced that while fasting you are not starving yourself, and that there is no danger of dropping dead at short notice. The conventional fear of fasting is alone sufficient to cause death if the fast is continued for any period. A seven- or ten-day fast, on the part of one who knows nothing about fasting, frequently *does* cause death, simply because the mind is convinced that if one fasts for that period he is absolutely sure to die. This indicates the great power

of the mind over the body. It shows that you can actually kill yourself, by your mental attitude, by merely believing that you are going to die.

Let me especially emphasize at this point that the mind has just as great a power in the other direction and if you will recognize and use this mental influence you can often recover from a serious complaint through the aid of the mind alone. Another power evidenced by the mind is that which is shown in a determination to get well. If you simply determine that health and strength shall be yours, that you are going to get them; if you vow to yourself day after day that you will secure health and strength, no matter what the cost may be, you can readily realize that an attitude of this kind will be a tremendous force in the right direction.

If, in dealing with a patient I find it impossible to satisfy his mind that a fast would be beneficial, I hesitate to prescribe it, except for a very short time, say one or two days. There is little can be gained if the mind is in a state of discomfort and unrest. It produces a corresponding disturbance of the body which practically nullifies any good that might be gained from the abstinence from food.

I also follow this same method if one is taking a fast, and, not deriving the immediate benefit he expected, begins to express fear and dread lest some injury should result. I invariably take this as an indication that it is time to break the fast. People have been shipwrecked on a desert island and, having no food for several days, have died. There is no question whatever but that it was fear rather than the absence of food that actually produced death. For as I have so often affirmed, we have had weakly invalids who have fasted from one to forty or fifty days with an ultimate increase rather than a decrease of strength.

MENTAL DIVERSION DURING A FAST.—The calls of abnormal appetite are so insistent, as a rule, when one first begins to fast, that, unless he is mentally occupied, he is apt to spend so much thought upon his own condition, and feel the calls so strongly, that the abstinence is made much more dif-

ficult than it need to be. The old adage: "Satan finds some mischief for idle hands to do" is perfectly exemplified in the faster's case. You will surely be miserable unless you get your hands and your mind occupied. Read, sketch, plan, walk, go fishing, botanizing or geologizing, do anything in reason rather than be idle while fasting.

It is a good plan to reserve a specially diverting job of work for the term of a fasting-cure, but it should be remembered that too severe physical efforts increase the demands upon the reserve energies of the organism. Tree-felling while fasting would be burning the candle of life at both ends, as would any other violent exercise. Short, easy walks are good, but above all find something to exercise your mind.

FASTING AS A LAST RESORT.—There comes a period in the lives of many sick people when they are compelled to do a large amount of thinking on their own account. They have been afflicted with disease for many years; their ordinary physicians have signally failed to give them relief; they have tried specialists in vain, possibly they have indulged in expensive and dangerous surgical operations; they have traveled and tried the climate cure; they have been to Europe and have taken the baths of Germany and Austria, and yet they have found themselves not only not improved in health, but constantly growing worse. Under such conditions it is reasonable to assume that an intelligent person would begin to do a little thinking on his own account. Emaciated in body, depressed in mind, despondent through and through, they are at their wits' end. Everything they have tried has failed. Can there be any "balm in Gilead" for such as these?

Is it not strange that during all these years of vain attempts it has never once occurred to them to stop their frantic rushings to and fro, their vain swallowing of drugs, and watch the silent and never failing processes of Nature?

This is all I ask of those of my readers who are in the despondently sad condition to which I have referred. It matters not how one has come into such a condition, there is no denying that it is one to call forth the deepest sympathy

of every human heart. It is in this spirit of profoundest sympathy that I urgently ask you to quit trying the nostrums of learned (?) men who think they know, and revert to the simple, easy and never failing processes of Mother Nature. As soon as your own mind is satisfied, there can be nothing easier than fasting—simply doing nothing, and allowing Nature to work out your salvation in her own beneficent way. Your physicians have failed you, drugs have not relieved you, climate, travel, and baths have allowed you to grow worse instead of better, so why not cease to rely upon the judgment of others and exercise the God-given power of your own individual thought. Be a man! Be a woman! On your own responsibility, and then, regardless of the solemn warnings that will doubtless be given to you by your scientific health guardians, whose advice for so long you have so slavishly followed, and the remonstrance of your friends who have been trained to the false belief that kindness and sympathy demand that they constantly tempt your appetite—I say, regardless of warnings and protestations, temptations and allurements to eat—resolve to try this simple, natural process of fasting long enough to determine what value it has in your case.

It is safe to affirm that the major part of the people who have been induced to try fasting have done so as a last resort, or after they have wearied themselves, and, possibly, impoverished themselves in trying the ordinary methods of all the different schools of physicians. What are such people to do? They have gone the round of the physicians and are practically no better off than when they started. Many, indeed, are worse off. In some way they have learned of this simple, natural, uncomplicated, cheap method of eliminating disease. It costs them nothing but a little determination; they know they cannot be any worse off at the end either in body or in pocket; it does them good to wake up their partially dormant and sleeping will and to stimulate them to renewed hope; and thus, though even with fear and trembling as to whether they can stand it, whether it will not seriously weaken them, they begin their fast. The first day or two, possibly three or four

days, they feel faint, dizzy, sometimes nauseated, and the appetite constantly insists upon being satisfied. If their will and determination are good they continue and very seldom are they disturbed very much after the first three or four days. To their surprise the insistent demand of the appetite becomes quiescent, the brain becomes clearer, the eye brightens and loses its former weakness. Perhaps the tongue still remains heavily coated and the breath fetid, and to those who do not understand these symptoms, mental disquiet may be the result, but this is not the case if they have learned one of the important facts of fasting, namely, that these symptoms show that the entire digestive organism which had previously given its attention to absorbing and assimilating the food taken into the stomach and distributing the nourishing elements therein throughout the body, now reverses its functional duties. In other words, instead of assimilating the nourishment, it is eliminating poison and it has begun what might be termed one of the curative processes. It might be said that this is the principal reason why fasting cures disease. This process reverses the natural functional activities of the digestive organism. The alimentary canal, instead of absorbing nourishment, begins to throw out poisons, and the bad taste and coated tongue indicate the truth of this conclusion. The breath of an ordinary individual should not have an unpleasant odor. When the breath gives off a foul odor it is a sign of trouble, and when these indications of disorder appear and you pay no attention to them you can rest assured that the time will come when there will appear an acute ailment that is likely to mean death, or a chronic disease that will be difficult and, in some cases, impossible to cure. Especially will an acute ailment promise death if you follow the ordinary methods of treatment which permit feeding during the acute ailments.

You are actually committing a crime against your stomach when you eat while suffering from acute disease. I defy any student or scientist to disprove this statement. When you suffer from acute disease, pneumonia, fevers, etc., the principal object of which is simply the cleansing of the blood, every

particle of food you take into your stomach retards recovery. A typhoid fever patient will lose weight and strength faster when being fed than when no food is given. In other words, he will lose less strength and recover far more quickly when no food is given. When the digestive organs do not require food and you persist in putting food into the stomach you are poisoning yourself and adding to the disease. You are actually making it more serious. If these statements do not impress you as being reliable, a little experimenting on your own account will soon prove their truth. What is needed in disease is to give the human body, that marvelous mystery that each and every one of us possesses, a chance to cleanse itself; a chance to eliminate the poisons that are clogging functional activity. There is no need of fear, no need of any one dying of an acute ailment unless vitality has been very greatly retarded through dissipation, through prolonged use of alcohol or some other similar cause.

The only cases where fasting is of no value are those where death is already practically at hand. Wherever the vitality has been so depleted either by medicinal drugging, through vicious habits, prolonged dissipation in the use of alcohol or some other deleterious drug, fasting will fail because there is not enough recuperative power within the body to expel the disease.

FASTING NOT THE ONLY CURATIVE MEASURE.—I would not have it thought that, though I regard fasting almost as a "cure-all," I consider it *the only thing* in the treatment of disease. I have lamentably failed in my aim if I have not made it clear that there are other important things as well as fasting to be carefully considered and resolutely observed if one would build up the perfect, radiating, healthful manhood and womanhood that we all so much desire. Fresh air; plenty of sleep; abundance of sunshine—all of these things are essential. A little thought bestowed upon these subjects, so that the principles involved are mastered, a little self-denial to begin with, and a never-ceasing will that nothing can prevail upon to divert from the path that has been carefully chosen, and

the results are sure and certain. Why are we content to simply exist when life itself, abounding, joyous, radiant, whole, is within our grasp? Every conscious moment of life should be a joy; every hour should add to the satisfaction that is able to exclaim with Browning:

“How good is man’s life, the mere living! how fit to employ
All the heart and the soul and the senses forever in joy.”

WRONGFUL INTERFERENCE WITH NATURAL FASTING.—I would especially warn my readers against interfering with the natural process of the fast by taking drugs or other medicines during the time of abstinence. Some years ago (in 1903) Edward McIntyre, of Moosic, Pa., fasted for forty days with the object of curing paralysis. Toward the end of his fast he had a pain in his paralyzed side, the first that he had had for years, indicating quite clearly the possibility of recovery. He was forty-seven years of age, and during the fast his weight was reduced from 167 to 118 pounds. He ended his fast on Tuesday and died the following Friday. In the reports of the methods used in breaking his fast we find that his physician, Dr. Price, considered that it was necessary to use a saline solution, in addition to the milk and orange juices, in order to build up the blood, so he said.

When one has gone through a long fast the entire functional system is in a very delicately acute condition, and drugs or stimulants of any kind that under ordinary circumstances would have but little effect are liable to produce death. I am not able to say with authority whether it was the saline solution or the long fast that ended Mr. McIntyre’s life, but I do know that a factor of danger is always unnecessarily introduced where any other than natural foods are used, and I quote this case simply as a warning to prospective fasters to follow only the most simple and natural methods.

In 1907 Mr. J. H. Swerdfiger undertook to fast. He was employed as a compositor in the Government Printing Office, in Washington, D. C. On the ninth day of the fast he fell dead while at his work. I refer to this case as it is the only one to my knowledge out of the many thousands who

have fasted under the influence of the literature advocating fasting where a fatality has occurred. I did not personally advise the fast. Naturally the press and the physicians made it appear that death was the direct result of the fast, whereas I can point to thousands of cases as examples of fasting, every one of which, save this, has terminated with direct benefit to the faster. As well accuse the physicians of being actually responsible for the death of every patient who succumbs to the inevitable. I am neither so foolish nor so unjust.

In Mr. Swerdfiger's case I am not familiar with the result of the autopsy, but am fully assured that it revealed a condition that would have caused death whether he had fasted or not.

Dr. Dewey, whose writings are familiar to all students of fasting, maintains that if one's vitality is so depleted, or if one of the important organs of the body is so nearly worn out that death is near at hand, the result is absolutely certain, regardless of whether food is taken or not. I think that whether fasting or eating, there is naturally a possibility of an occasional death where a multitude is concerned. I believe if there is any way of recording the experience of a thousand different persons for a total period of, say, fifty thousand days, while fasting and while eating, a larger number of deaths will take place among those who follow the usual three-meal-a-day regimen than in the case of those who abstain from food. In other words, there is much less danger of your dying while fasting than there is while eating.

AFTER FASTING, DOES THE DISEASE RETURN?—Where one who is afflicted with disease relies upon artificial methods for a cure it is no uncommon thing for the disease to return as soon as the treatment ceases. This is *never* the case with the simple and natural methods of Nature. Necessarily if a man suffering from delirium tremens is cured of the disease by abstinence and he then returns to his liquor drinking he will undoubtedly bring on another attack. But where a disease is naturally cured, and the evils and errors that caused it are avoided in future, *there can be no return of the original*

complaint in any form. This is an axiomatic proposition, however much it will be combated by the orthodox physician, in the light of whose methods and experiences it will appear as absurd as it is false. Yet I affirm and reaffirm it with confidence, pointing to thousands of cases, *self-cured* as well as those cured under my advice, of whom the affirmation is perfectly true.

WHEN SHALL I FAST?—I am often asked the question as to how one knows when to fast. I do not advise that people should fast promiscuously, simply because they think a fast would do them good. Nature tells one when to fast as decidedly and distinctly as she tells one when to drink.

When the body is full of poisons, when it is struggling for vitality, struggling for health and strength, struggling to cure disease, struggling to bring about that condition which means physical harmony, under such circumstances, in nine cases out of ten, in twenty-four cases out of twenty-five, and you might even go so far as to say in ninety-nine cases out of one hundred, what is needed first of all is a fast. Though some of them are not properly nourished, they seem to be, and are, literally starving to death, although constantly eating all the food they can crowd down, yet even they need to fast.

FASTING IN HEALTH.—I have received a number of letters at different times from young men and women who are laboring under the impression that fasting is a beneficial thing for those who are in health, and that it will aid them more rapidly to increase in strength and vigor. This is a most erroneous conception of the office of the fast. As I have tried to explain, the fast is only Nature's simple remedy for the expulsion of disease. Primarily it has nothing to do with the upbuilding of the body, except as it removes the poisons and impurities that prevent such upbuilding. The young man, the young woman, whose digestion is perfect, who suffers no pain, whose liver works steadily and effectively, whose lungs are strong and respond to all the demands made upon them, does not need a fast. It is well enough to let well enough alone. Be thankful for your perfect health, enjoy your food

and its perfect assimilation, continue to exercise prudence and full control of your appetite, use your muscles to their capacity, expand your lungs to the deepest cells, breathe all the fresh open air you can, bathe the whole body where possible in air and sunshine daily, as well as in cold water, keep your conscience clear of offense against your fellow men and women, live an unselfish and helpful life, do at least one beneficent act every day, fulfil with conscientious fidelity every duty laid upon you and there will be nothing to hinder your living to an age far beyond that of most men, in a state of abounding, radiant, joyous health.

IS NOT LIGHT EATING BETTER THAN FASTING?—It is no uncommon thing to find people who are opposed to taking a fast and who ask me if it would not be better for them to eat very lightly instead of fasting. It cannot be denied that to eat lightly when one is diseased is immeasurably better than to eat heartily, but it is unreasonable to expect a cure of a severe acute disease, or a long standing chronic one, by any such half-hearted and temporizing measure. Every particle of food taken into the body practically goes to feed the disease, hence is an injury instead of a benefit. All that the food does, anyway, is to satisfy the abnormal appetite which should resolutely be driven out.

But even were it advisable from a healing standpoint to eat lightly, the experience of many who have tried it demonstrates that the attempt, as a rule, is a failure. Here is Mr. Sinclair's experience, which corresponds very largely to that of many others I might give.

"Several people have asked me if it would not be better for them to eat very lightly instead of fasting, or to content themselves with fasts of two or three days at frequent intervals. My reply to that is that I find it very much harder to do that, because all the trouble in the fast occurs during the first two or three days. It is during those days that you are hungry, and if you begin to eat just when your hunger is ceasing, you have wasted all your efforts. In the same way, perhaps, it might be a very good thing to eat very lightly of

fruit, instead of taking an absolute fast—the only trouble is that I cannot do it. Again and again I have tried, but always with the same result: the light meals are just enough to keep me ravenously hungry, and inevitably I find myself eating more and more. And it does me no good to get mad and call myself names about this, I just do it, and keep on doing it; I have finally made up my mind that it is a fact of my nature. I used to try these 'fruit fasts' under Dr. Kellogg's advice. I could live on nothing but fruit for several days, but I would get so weak that I could not stand up—far weaker than I have ever become on an out and out fast."

SPECIAL PREPARATION FOR A FAST.—Some people have the idea that a fast is such a remarkable thing that it must be prepared for by several days' special exercises, diet or treatment. All of this is absolutely unnecessary. Learn to look upon a fast as the most natural and reasonable thing in the world. I take a fast without any more thought than when I take a drink of water. If I find any suggestion of catarrh, to which I have always been predisposed, I immediately cease eating for one, three, six or nine meals, or as many days as I find it necessary to eliminate the trouble. The main thing in beginning a fast is to have your mind satisfied, and as soon as this is accomplished, unless your body is seriously depleted by long continued disease, you need anticipate no other than the most beneficial results.

WORKING DURING THE FAST.—The question is often asked me, is it advisable for one to continue working while fasting? In this as in everything else special conditions must be observed. If one's vitality is low it would undoubtedly be a great mistake to attempt difficult and long continued exercise while fasting; I believe in a certain amount of daily exercise, even when weak. If one can exercise in no other way it is well to open all the windows and go through a few simple, easy exercises while in bed; these are fully described elsewhere. But in the case of men of ordinary vigor, who wish to fast in order to get rid of some chronic ailment which does not seem to deprive them of the strength to discharge their

daily labor, I should say that it is better to work or exercise than to remain idle. It must not be forgotten that the mind has a tremendous influence upon the body when fasting as well as at other times. We are so little used to denying ourselves, to depriving ourselves of all that the appetite calls for, that appetite has become an imperious master. If, therefore, we call upon ourselves to fast, and then refrain from work or leave the mind unoccupied, appetite is liable to assert itself with insistent clamor, and in any but the strong-willed and resolute, break down the determination that has been formed. To such as these work will be a decided advantage. Keep yourself as thoroughly occupied as possible. Don't allow a moment to pass without finding yourself either mentally or physically engaged.

It may be as well to relate here a few personal experiences (as types of many that might be presented) of men of different occupations who have continued at their labors, either mental or physical, while undergoing a fast.

The *Colorado Dispatch* in telling the story of the 15-day fast of Edgar Wallace Conable, Editor of the *Pathfinder* of Roswell, says: "When Mr. Conable was fasting he worked in a manner that would make the walking delegate of a labor union faint with dismay. At six in the morning he could be found at some difficult physical labor, and until six or seven o'clock at night he toiled continually and incessantly, not resting at meal time, of course, as the ordinary laborer would. After a hard day's work he went every day into his den, where he wrote articles for his magazine, the *Pathfinder*, until ten or eleven o'clock at night."

In May, 1910, Dr. Gustav A. Gayer, a professor of psycho-therapeutics in New York City, decided to take a fast. Being a scientific man, a graduate of Bonn University (Germany), Dr. Gayer consulted with three highly reputable New York physicians, Drs. Wm. E. Young, Floyd B. Ennist and A. B. Jamison, and arranged with them to see him daily and take notes of his condition. He himself carefully planned the details of his fast, and kept records of each of the

days. In addition, Dr. J. S. Wile, a blood specialist, made frequent tests of the pressure and corpuscular health of his blood, while Dr. M. H. Curvey, a specialist on the nerves, kept a scrutiny upon his nervous system. Dr. Young took a general supervision of the fast as a whole. The fast lasted for 31 days, and during the whole of the time Dr. Gayer continued his regular occupation. As a professor of psychotherapy he gave one or two lectures every day, made a number of professional calls, and exercised hypnotic powers upon two patients. It will be seen that his calling demanded mental concentration, and our scientists tell us that there is nothing like mental concentration for draining physical vitality, yet on the twelfth day of the fast, when a reporter called upon Dr. Gayer, he showed nothing of the lassitude the reporter expected. Here is what the latter says:



Dr. Gustav A. Gayer, who fasted thirty-one days under medical supervision.

"On the twelfth day of the fast, when I first called upon Dr. Gayer, he showed nothing of the lassitude one would have expected. Far from being lethargic, he went about humming and singing, ran upstairs two at a time, and acted in general as light-heartedly as a school-boy. On the street his carriage and jaunty step were plainly admired by passers-by, none of whom

could have thought it possible that the object of their admiration was a 'victim' of prolonged starvation."

On the 17th day of the fast Dr. Gayer was evidently in as good condition as on the 12th day, for one of his consulting board, Dr. Ennist, who was a member of the Board of Health, New York City, said of him:

"Dr. Gayer's muscular energy is well-preserved. I saw him yesterday pick up a chair weighing twenty pounds with one hand, and hold it aloft for a full minute. No evidence exists of any evil consequence of the abstinence from food."

On the 20th day Dr. Wile made a laboratorial examination of the faster's blood. In his signed report he states that there were no signs of degeneration, but that the blood was healthy and excellently colored, containing 5,192,000 red corpuscles.

On the 30th day Dr. Wile made a similar examination with like results.

On the 23rd day Dr. Kirby, after a searching examination, declared the nervous system to be in a most satisfactory condition.

On the 25th day Dr. Young described the faster as being "the picture of health" with "pulse slow but full; temperature normal; blood pressure fair; eyes bright; tongue good color."

On the last five days of the fast Dr. Gayer remarked repeatedly that "he was enjoying more buoyant health and strength than ever before."

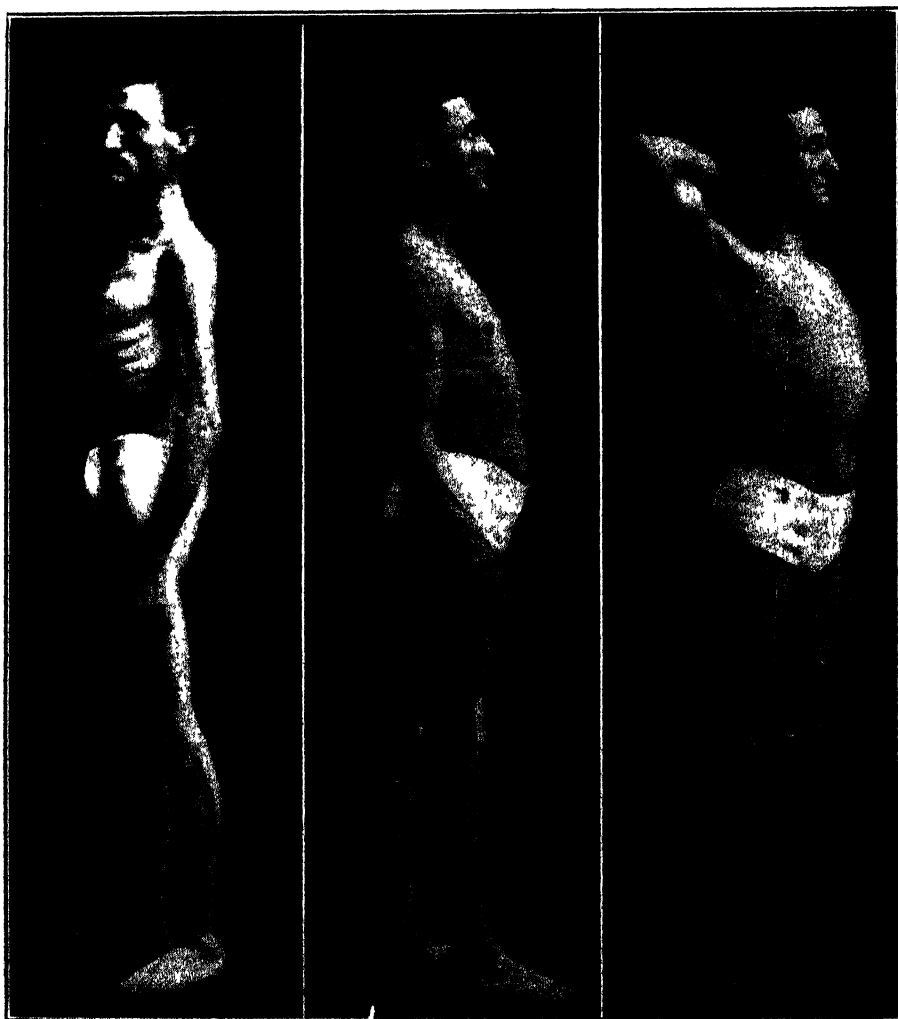
Mr. H. C. Long, in telling the story of Dr. Gayer's fast, makes the following remarks, some of which, being on the subject we are considering, are worthy of careful thought:

"Dr. Gayer is a man of generous proportions. The rigid training of the Prussian army—in which he was formerly an officer—disciplined him and made him of iron; and because of it, doubtless, his will has assumed the authority to command himself as well as others. His shoulders are broad, his face bluff and hearty, and ruddy as though from brisk winds. His eyes are kindly, and he radiates good cheer.

"During the fast he slept in the open, rain or shine, in a little summer house on his lawn. His food was the simple

cup of hot or cold water taken every hour. Exercises included auto-suggestion, deep breathing, air and friction baths, hot and cold water baths, long walks and rifle shooting. During the first two weeks the doctor accomplished more work than usual daily, and it was only in the last week that the amount fell a little below his former average."

The experiences of Mr. Upton Sinclair, the noted author, have excited a great deal of attention throughout the world,



Mr. George Propheet at the end of a fifty-one day fast.

Mr. Propheet thirty days after the end of fast.

How Mr. Propheet appeared sixty days after his long fast was ended.

owing to his various articles in the magazines and his book on "Fasting for Health." His first prolonged fast was taken under my direction. In regard to work during the fast, here is Mr. Sinclair's own statement:

"On my first fast I could not have done any work, because I was too weak. But on my second fast I could have done anything except very severe physical labor. The last time I took a long fast, I planned a play and wrote two acts of it. (The play has not yet been published, so I cannot refer the readers to it, but I am quite sure that it is as good work as I have ever done.) I have one friend who fasted eight days for the first time, and who did all her own housework and put up several gallons of preserves on the last day. I have received letters from a couple of women who have fasted ten or twelve days, and have done all their own work. I know of one case of a young girl who fasted thirty-three days and worked all the time at a sanatorium, and on the twenty-fourth day she walked twenty miles."

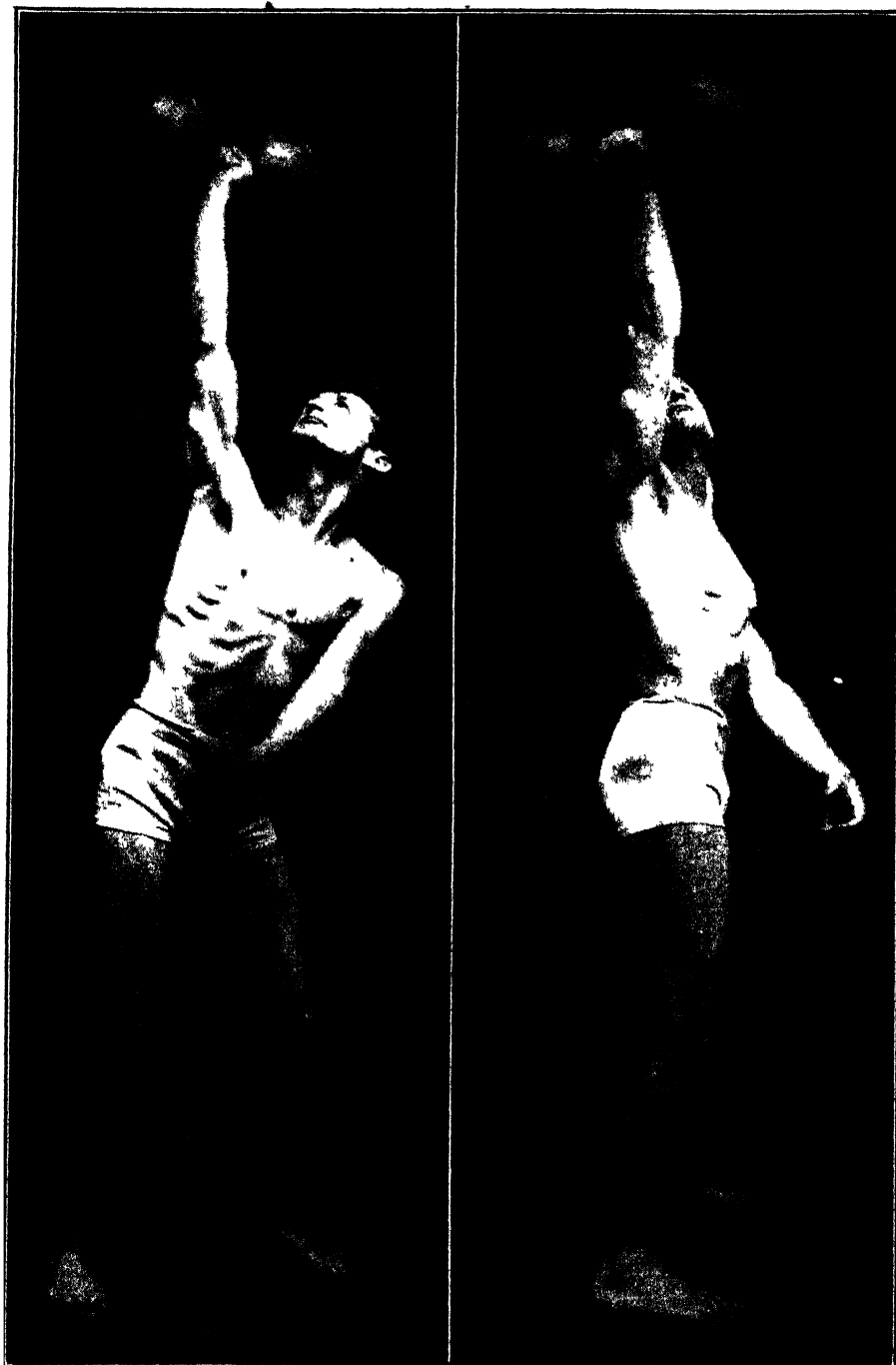
In *Physical Culture*, Mr. George Propheet told the story of his 51-day fast, which he began in December, 1901. Here is what he says as to the continuance of his work during its progress:

"When I commenced this fast I determined to go about my affairs as usual without paying any regard to the unpleasant feelings of the body. While it was in progress I visited the Pan-American Exposition in Buffalo for a couple of weeks, and the balance of the time was at my office in New York or in the country. Every day while it lasted I walked from five to twelve miles."

In the year 1900 I took my own first seven-day fast, as elsewhere referred to. In regard to this matter of working during a fast, the following account of my experiences, written at the time, cannot fail to prove of interest:

"The average person imagines that he becomes weak even after missing a meal, and a fast of one day is supposed to take away all strength. There was never greater error.

"On the fourth day of the fast, after testing my strength,



Photograph showing Bernarr Macfadden pushing up a one-hundred-pound dumb-bell at the close of a seven days' fast.

I concluded to use a fifty pound dumb-bell in illustrating my strength on the seventh day of the fast.

"The seventh day came at last, though I must confess the week seemed rather long. I visited the gymnasium after my walk with the intention of leaving instructions that the fifty-pound dumb-bell be sent to the photographer's gallery. On arriving there, I felt so strong that I concluded to test my strength. I thought that maybe I might be able to raise without difficulty a heavier bell than fifty pounds.

"I raised the fifty-pound bell over my head a number of times without the slightest difficulty. It did not seem heavier than when at my usual weight. I tried the sixty-pound bell, then the seventy and eighty-five with similar results, and immediately left instructions to send the one-hundred-pound bell over to the gallery, as I felt that my strength was equal to raising it.

"I know full well that my readers will be amazed at these feats of strength performed after this long fast, and no one could be more amazed than I, for, as stated before, I was under the impression that to raise a fifty-pound bell over head with one hand after a fast of this character, would really be something worth boasting about, and I was astounded at my strength under the circumstances.

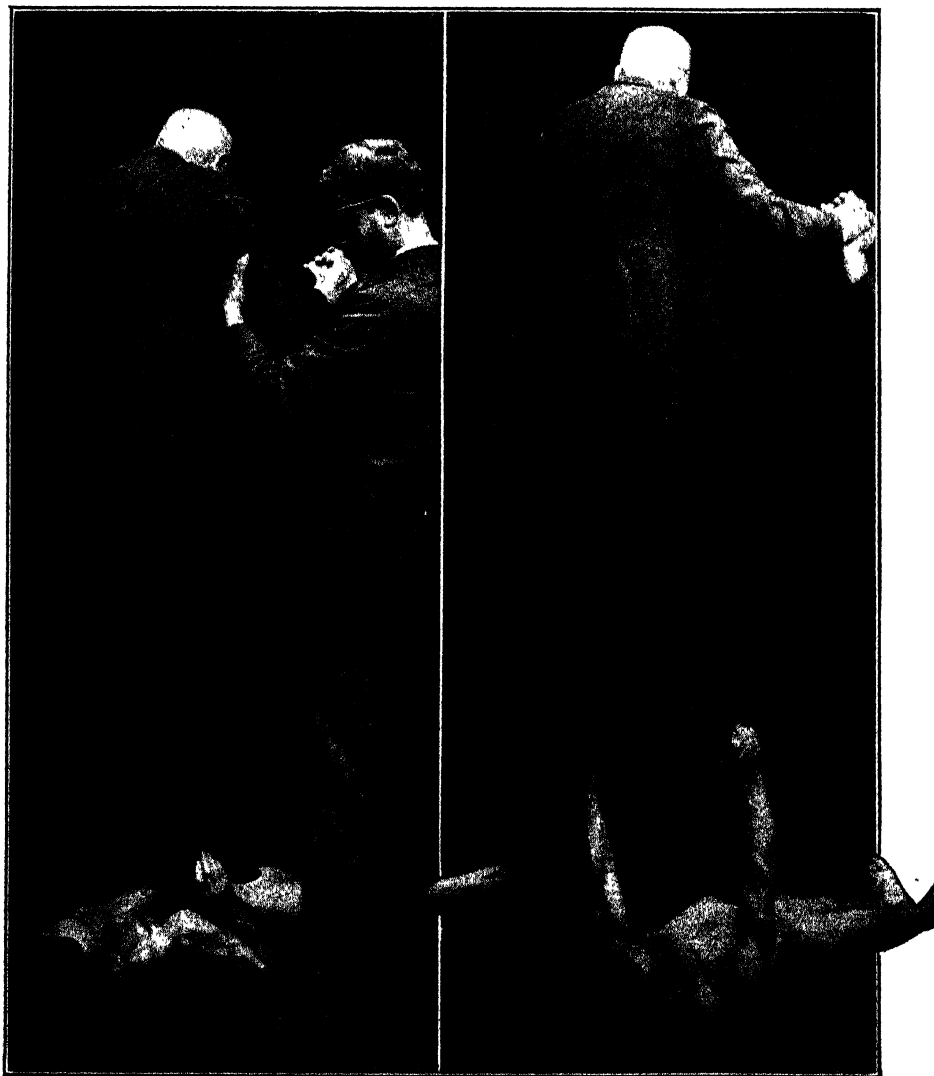
"The hundred-pound dumb-bell was sent to the gallery, and Sarony's employees who saw and photographed the feats will vouch for the statements made and the illustrations shown. I had to raise the hundred-pound dumb-bell twice before a proper negative could be made of the feat.

"The second feat of raising this 200-lb. man as shown in the photographs was not easy, as any one will discover on trial, and it would be well to remember that I never at any time in my athletic career believed in using heavy weights, and had not attempted to raise a hundred-pound dumb-bell off the floor for at least two years previous to the performance of these feats.

"While in active practice in general athletic work a number of years ago, I could raise a hundred-pound bell eleven times

at arm's length over head with one arm, but at this time I occasionally handled these heavy weights. As I have taken no heavy exercise for a number of years, more than a slight effort would be required to raise this heavy dumb-bell, even when my weight was at its usual standard."

Not many years ago there was in my organization a literary



Bernarr Macfadden raising a two-hundred-pound man to arm's length, after the conclusion of a fast of seven days. This photograph illustrates the degree of strength retained during extended fasts.

gentleman of repute who undertook two fasts under my directions, one of five days, and one of seven days. During both of these fasts he continued his literary labors, working from twelve to sixteen hours each day, and occasionally delivering lectures. He was a speaker of considerable force and energy. Yet no one would have dreamed of any diminution in either his intellectual or physical energy had they seen and heard him during his two fasting periods.

Perhaps one of the most remarkable cases on record is that of Mr. Richard Fausel, whose story was told in *Physical Culture* for September, 1910. Mr. Fausel had been suffering for some years from a dropsical swelling of the legs and at one time weighed nearly four hundred pounds. For some years he had been a hotel-keeper, and it was while he was practically rendered incapable of physical exertion, although he still conducted his business from his bed, that a copy of *Physical Culture* fell into his hands, which described the benefits to be derived from a fast. As all of his physicians had failed to help him or give him any relief, Mr. Fausel determined to try the fast. The result of his first experiment was so gratifying that he came to my Healthatorium in Chicago, and placed himself under my supervision.

For a short time prior to his last fast, however, he had lapsed into serious dietetic errors, and as a result determined to enter on another fast. At this time he weighed 297 pounds, and I had no hesitancy in urging him to take a prolonged fast, no matter how lengthy the period might be. The result was that he virtually fasted ninety days, one of the longest periods on record. From the following it will be seen that Mr. Fausel continued to work and exercise vigorously during the whole progress of this fast:

"At the beginning of the fast he weighed 297 pounds. For the first forty days he walked, on an average, twelve to fifteen miles daily, and each day took massage treatment and special exercise, followed by a cold douche of about four to five minutes' duration. He also disported himself in the swimming pool, at our Western headquarters, for from thirty

minutes to one hour each day. He drank on an average from five to six glasses of water daily."

The only food taken by him at this time was a small quantity of lemon juice each day.

THE BATH IN THE FAST.—During the fast the daily bath



Photographs of Mr. Richard Fausel before and after a forty-two days' fast in which he succeeded in reducing his weight seventy-two pounds.

is of the highest importance. The skin of the human body has three important functions to perform.

1. It protects the tissues.
2. By means of the periphery nerves it locates sensation.
3. It is an organ of elimination.

It is hard for the ordinary mind to realize the vast importance of this latter function, or that through the millions of pores of the skin there is daily discharged as sensible or insensible perspiration as large an amount in weight as that cast out of the body by means of the bowels. Civilized man, covered as he is with clothing, fails to get the benefit of this work of the skin. The tighter and closer he wears his underclothing, the less opportunity there is for this waste and poisonous matter to escape. Much of it is absorbed by the underclothing and much is deposited on the surface of the skin.

The only healthy skin is that which is constantly exposed to the air and sunshine. The prudish ideas of our civilization and our religious training for many centuries render this nudity impossible. Custom tolerates the partially nude torso of the civilized woman in "full dress," and the bare legs and torso of the athlete, when engaged in his exercises. The bather at the seaside resort may also expose a large part of his body, though if a woman refuse to wear shoes and stockings, she is looked at askance by her more "civilized" sisters.

But let the male athlete, or the female bather whose legs are uncovered, attempt to walk in a park or down the streets of the city, and at once a hue and cry would be raised of "indecent exposure" and "the gross insult that had been offered to modesty." The absurdity of this inconsistency is self-evident. But human nature is so inconsistent, anyhow, that one need not be surprised at this form of its manifestation.

It was one of my own experiences when a mere youth, when I had built up a strong muscular frame by exercise and following Nature as far as I knew it, that led me to an appreciation of the large part the skin performs in the gaining and preservation of that perfect health with which, as I have constantly affirmed, I believe it is God's intention that every

human being should be endowed. Despite all my care and exercise, I had taken a severe cold which I seemed unable to shake off. I was not then as busily engaged as I now am, so that not only did time hang heavily on my hands, but my purse and pocket were almost empty.

I looked around for some work that would occupy me a few days and a friend suggested that I pose as an artist's model. The idea struck me favorably. I went to the studio and was immediately engaged. It was cold weather. The studio appeared cold and drafty when I undressed and took my position on the pedestal. But, to my great surprise, a half hour's exposure, instead of increasing the sensation of cold, made me feel better. I posed for several hours that day and for the first time in weeks went to bed that night with my cold considerably relieved. After another four hours' exposure of my whole body the next day I experienced another marked improvement in my cold. By the end of the third day I was entirely free from the unpleasant symptoms that had distressed me and at the end of the week was entirely recovered.

From that day to this I have been a strenuous advocate of a natural life as far as the exposure of the body to the air is concerned. Naturally, living in civilization and subjected to its laws and requirements, I wear clothing the same as other people, though I don the Greek costume as often as possible and under all circumstances in summer wear clothing that can easily be washed so that there is no underclothing to prevent the air from reaching my skin. In winter time I wear thin and loose underwear and in that way get as much air to my body as possible. But so long as civilization refuses to allow the habitual exposure of the body, as it occasionally allows it at the seaside and in the ball room, I intend to utter my protest against such absurd distinctions and at the same time enunciate my belief that we would be better physically and morally if we were to get rid of the idea that the body is obscene, and therefore must be covered, and to do everything in my power to bring about, by education and healthful liv-

ing, the idea that obscenity is in the mind of the one who looks rather than in the body that is exposed.

The skin is as much a breathing and eliminating organ as are the lungs. While to the popular mind this may seem absurd, and even to the practicing physician of the old school a more academic fact than a useful one, to the hygienist and natural liver its importance can scarcely be overestimated. The danger of interfering with the eliminating functions of the skin can be well understood from the fact that some years ago at a theatrical pageant one of the performers was entirely covered with gold-leaf. To the intense amazement of both the performer and his associates, this simple closing of all the pores of the skin caused death, even though the lungs were able to carry on their work uninterrupted.

But to return now to the subject of the bath. Having seen the importance of the skin as a breathing and eliminating organ, it should need but little argument to show that it must be kept clean and in good condition. The bath is by far the best means of attaining this end. Hence the patient undergoing a fast should arrange to take a bath daily. The dry friction bath will to a certain extent take the place of a water bath, if one so desires. This can be taken with a rough dry towel, though it is more satisfactory if taken with two bristle brushes, holding one in each hand and brushing the body all over, beginning at the ankles and brushing upward, beginning at the wrists and brushing toward the shoulders, keeping in mind the idea of always brushing toward the heart. This friction bath not only furnishes splendid stimulation to the skin, but is moderately good exercise.

If the circulation is especially good and there are no symptoms of chilliness to indicate defective circulation, a cold bath may be taken. This bath can be taken by simply wetting a towel and rubbing the body with it; by dashing cold water over the body; or with a cold shower bath, or, if the circulation is more than usually good, by taking a cold plunge into the bath tub. As a rule, however, I would not advise this latter method, though it will bring about no other than beneficial

results, provided one recuperates thereafter within a few minutes with a feeling of warmth and comfort.

Remember, however, if the circulation seems to be defective; if one is cold most of the time and the feet and hands are cold, cold water must be used with the greatest degree of care. A dry friction bath would be better than the cold bath. Should one experience more than ordinary difficulty in keeping warm, a warm bath is advised daily. It would be an advantage to remain in this warm bath until the body was thoroughly heated. Make the water comfortably warm to start with; remain in the bath fifteen minutes to half an hour, and gradually add hot water until the body is thoroughly heated. After the hot bath it would be advisable to dash cold water over the body, or rub the body all over with a cold wet towel. Use just enough cold water to give the external parts the benefit of the tonic effect of the cold.

DRINKING WATER DURING THE FAST.—As will be seen from the various methods for the treatment of disease outlined in other pages of this work, I recognize the great importance of drinking water during the fast. There are some cases where it is well to refrain from the use of water, but as a rule it is not only to be recommended but its proper use is highly important.

The benefits of a fast can be materially increased by the free use of distilled water, not only as a means of washing out and cleansing the alimentary canal itself, but as a means of "flushing," as it were, the blood vessels and tissues of the entire body. The free use of water will assist greatly in the elimination of all waste matter. Where the tongue is coated and the breath bad, as is frequently the case, indicating a similar condition of the alimentary canal, then the liberal drinking of water is particularly necessary. When the digestive organs discontinue their work of receiving and assimilating food, at a time when the system is over-burdened with impurities, much of the poisonous waste matter of the body is thrown upon their interior surfaces. Hence the value of a plentiful use of drinking water and occasionally of lemon

and especially when on a fast, but the wafers are said to be not unpleasant to the taste. Such foodless foods are especially recommended by their enthusiasts for cases of diabetes and obesity.

It is suggested by these enthusiasts that such substances give the stomach of the faster something upon which to function and that the usual hunger of fasts may be reduced by this means; also that the indigestible cellulose acts as a broom to the digestive canal, sweeping it free of retained food contents which help to increase hunger by their fermentation and putrefaction, these latter processes delaying the benefits of the fast and, perhaps, actually creating more or less unpleasant symptoms of auto-toxemia.

I have taken many fasts and my experience in my own case and in many hundreds of others whom I have conducted through fasts has been that if one desires to fast it is best to avoid compromises. One who fasts almost invariably requires a stomach rest as well as general elimination, for few there are whose stomachs and digestive canals have not been already over-worked, possibly to the point of irritation or inflammation or of suppression of digestive fluids. Part of the benefits of a fast will be lost if one places that in the stomach which demands that it continue to function, especially to the extent and in such a resultless manner as will be necessary when absolutely indigestible material is taken.

Another effect of eating such substances would be the quickening of that false hunger which guides our appetites so often and so detrimentally to health. My experience has been that so long as one remains on an absolute fast, up to the time the normal appetite and hunger appear, he is gradually losing false hunger and comparatively soon is enabled to keep thoughts of food entirely from the mind. But once some compromise is made the appetite increases and, unless the will power is exceptionally strong, the fast is positively broken and real food is taken.

THE ENEMA OR INTERNAL BATH DURING THE FAST.—The use of the enema in constipation and other ailments of the lower intestines has been largely practiced for many years by a great number of people. That it is of value as a temporary

relief there can be no question. A number of eminent physicians have made extended experiments upon this flushing of the intestines and, while there is great unanimity of opinion as to its general utility, the scientists do not entirely agree as to its physiological effect.

Stadelmann contends that "its action is mechanical only, aiding the liver by removing from the intestine large quantities of decomposing stuffs, with swarming microbes and the ptomaines and toxins produced by them."

On the other hand Krull asserts that the cold enema is a powerful stimulant of the liver.

Kellogg thinks Stadelmann's conclusions are, "rather surprising when one considers the powerful influence upon the mesenteric circulation, of cold water introduced into the intestine. Very powerful fluxion of the liver must be excited by this measure, and the reaction following must be attended by decided increase in activity of the portal circulation."

The engravings on page 1457 clearly show those portions of the alimentary canal that are affected by the enema. The ring-like muscle at the end of the rectum is the sphincter muscle of the anus; above this is the sigmoid flexure; then the descending colon; next the transverse colon; and finally the ascending colon. The ascending, transverse and descending divisions of the colon are commonly spoken of as the large intestine. This intestine is a muscular and elastic tube, capable of great expansion, and from five to six feet long. It is here where the refuse of the stomach, liver and other organs gathers until it is passed out by way of the rectum.

Metchnikoff, whose exhaustive studies of the intestines have made him world famous, regards the large intestine as a great seat of danger to the human body. If one has eaten too much the undigested matter accumulates in this elastic pouch and there generates poisons which are absorbed and conveyed into the blood and then distributed to work injury throughout the whole body. If in the mass of undigested food there is a large amount of meat (animal flesh) the poisons that are generated are known as ptomaines, one of the most deadly

poisons known to man. Because of these facts, which have always been more or less vaguely known and understood, many unscientific men have unduly extolled the advantages to the gained by artificial evacuation of the large intestine. And a few years ago a great deal of publicity and advertising was given to this method of procedure.

There can be no question but that it is often of the highest therapeutic value, but, as I have elsewhere remarked, and repeated, no process that is not normal and natural can ever be the *best* thing for the human body. We may change the methods of Nature and some of these changes are less harmful than others, but the best method is to avoid such changes and follow the natural procedure wherever possible. Hence I would have it fully understood that I accept the enema as I would a crutch in a case of temporary lameness, and not as a permanent and suitable method for relieving the bowels. When a patient is restored to normal health this function should work as naturally as any other, and until it does, we may rest assured there is disease to be eliminated.

The peristaltic action of the intestines, which is the peculiar muscular expansive and contractive movement that compels the constant onward movement of their contents, is mainly effected by the presence of the material to be ejected. It is, therefore, apparent that when one ceases, as he does in the fast, to supply material for the action of the intestines, that the peristaltic action also almost ceases and there is no discharge of fecal matter. If the whole alimentary canal were in a healthy condition, this would be a matter of no importance but the fast is not a desirable thing for those who are in health. It is to aid in the work of expelling this waste matter that the enema is used.

I cannot too strongly warn my readers, however, against the formation of the "enema habit." While I recognize the full value of the enema as a wonderful assistant in the healing process, it should always be regarded as an artificial help, and therefore, not to be relied upon constantly. Being an artificial habit, no person in health should ever have to rely upon it.

And, while its injurious effects are not to be compared with the ravages caused by such an evil as the corset, it is just as bad (in principle) to rely upon the enema for relief from constipation as to rely upon the corset to sustain abdominal muscles. I am free to confess, however, that it is far better to rely even upon the habitual use of the enema than to place dependence upon any form of drug cathartics, be it castor oil, mandrake pills, or any of the other damnable nostrums and pernicious pellets that "work while you sleep."

The philosophy of the use of the enema during a fast is as follows: Soon after eating ceases, there is no digestive waste to enter the intestines from the stomach and excite the peristaltic action to the casting out of what waste matter is already there. Unfortunately our incorrect dietetic habits have reduced the normal and healthy action of the bowels, and the result is the accumulation of a large mass of fermenting, poison-producing waste, which is a source of danger every moment it is allowed to remain. The enema aids the enfeebled intestines to get rid of this waste material.

But this is not all. Experience demonstrates that when a fast is begun, the collection of waste material in the body does not cease—dependent somewhat, of course, upon the character of the disease and the temperament or physical condition of the patient. Yet, as there is no food waste to excite the peristaltic action this waste eliminated from the lungs, the blood or elsewhere, is liable to remain and cause injury unless artificially removed. Thus the enema again becomes a helpful assistant.

There is yet a third reason: Most people think that if they have a daily movement of the bowels they necessarily have a clean alimentary canal. I have often heard sufferers from digestive troubles assert that, because their bowels were regular and the fecal evacuations large, therefore there could be no trouble in their intestines. Such people have been very much surprised to find upon the administration of the enema that large quantities of old, hard fecal matter appear which

had undoubtedly lined the walls of the intestines and thus prevented healthy action. And it must be remembered that this will occur, not only for one day but, in some patients, for many days in succession. Post-mortem dissection of the intestines often reveals large masses of fecal matter clinging to the sides of the colon, thus fully explaining the disease of the patient in the inability of the organ to free itself from this accumulating filth. People in such condition experience a movement of the bowels only through the center of a choked up and consequently horribly diseased alimentary canal. Hence in all cases where intestinal disease is evidenced by the symptoms, the enema should be used freely.

My many observations have demonstrated that a large number of people are suffering from what the physicians call *atony of the intestines*. In plain English this is simply a lack of muscular power, and Physcultopathy, above all things, seeks to correct diseases of this nature. When the intestines lack muscular activity, and especially where the food eaten is of the white bread or of the sticky, innutritious varieties, improperly masticated and mixed with other foods and condiments that deaden the nerves and weaken the muscles, the effect is the accumulation of fecal matter which adheres to the inside of the alimentary canal and thus becomes the source of nearly every disease known to man.

As I have first shown, it is well known that one may have regular evacuations of the bowels, either naturally or by the use of cathartics, and still the intestinal tract be lined with decaying, rotten, stinking matter, which is giving out poisons to be absorbed into the blood and keep the patient in a half dead condition all the time. The fast, with the use of the enema, in such cases is of the highest value. The fast tones up and stimulates the nerves to awakened activity of the hitherto dormant intestinal muscles. This begins to loosen the mass of adhering fecal matter and then if the enema is wisely and persistently administered, the whole canal will be cleansed and the victim of his own evil dietetic habits given a new lease

of life. It is in cases like this that the enema should be used persistently and thoroughly.

The resulting bowel discharges will naturally vary according to the condition of the patient, but in most cases, especially of severe acute diseases or long continued chronic ailment, they will be remarkable and startling. Quantities of dark brown, foul smelling liquid, in which are lumps of solid impacted feces, are evacuated. These solid masses have generally been dislodged from the walls of the intestines and have been the cause of headaches, catarrh, and general distresses from which the body is suffering. In other cases they are recent accumulations made in the processes of elimination. In many instances a great quantity of stringy, whitish and colorless mucus will be evacuated, and in catarrhal and tuberculosis conditions, as the fast proceeds, this kind of discharge increases and betokens the most happy results for the patient. There are times when it seems as if the whole lining of the intestines were being sloughed off in the body's determination to rid itself of everything that has caused the trouble.

In the case of fevers where severe inflammation exists, there may be bloody discharges, but this should cause no fear. These are signs that the body is throwing off internal ulcers and the more rapidly ridding the body of the source of evil. It is remarkable how rapidly long continued pain, soreness and irritation disappear after such discharges of impacted feces, mucus or blood. And with this sense of relief comes the assurance of speedy restoration to health. This mental state, naturally, aids recovery. The more copious, therefore, the disagreeable discharges, the more assured of speedy recovery the patient should become.

As soon as the process of elimination is completed and the intestinal tract has been restored to its normal, natural, healthy condition, the tongue and purified breath convey the intelligence both to the patient and the outside world. The former looses its coated condition and becomes the beautiful pink of the healthy child. The breath becomes sweet and odorless, the saliva flows easily and gives an agreeable sensation in the

mouth, and, at the same time, there comes that happy, and to most people novel, experience—the realization of the true hunger as distinguished from appetite.

Where the full enema seems to be exhausting in its influence it should be avoided unless absolutely required for proper activity of the bowels. Sometimes the rectum is dry, and a half pint or pint of water will moisten it sufficiently to bring a bowel movement and under such circumstances there is not that devitalized feeling that often ensues after using a full enema.

DANGER SIGNALS DURING THE FAST.—Generally speaking, there need be no danger apprehended from the fast. In the many thousands of cases that have come under my personal direction, there has not been a single death as the result of a fast and in nearly every case, except as referred to elsewhere, so far as I know, there has been nothing but the most positive benefit. At the same time, with persons of low vitality, or where the vital forces have been depleted by a long struggle with chronic ailments, or where a virulent acute disease is to be combated, it is well to be prepared for symptoms that may arise and denote danger.

These signals are the greatly accelerated pulse, or the reverse. Neither of these signs, however, is always an indication of danger. There are times when a faster may have an accelerated pulse and other apparently serious symptoms, and yet the indications taken altogether clearly denote that he is progressing very rapidly towards a more perfect state of health. But the inexperienced faster, at such times, would do well to break his fast. The same might be said of the slow, feeble pulse. As long as the pulse ranges between 50 and 110 and is strong and regular there is little or no danger. But variations above or below these figures should be viewed with suspicion, and, if the faster is not under expert supervision, he had better break his fast than run any risk.

It is better to be on the safe side if one has not had experience in fasting. For instance, I have often continued fasts even with a greatly accelerated pulse, and I have con-

tinued fasts on occasions where the pulse was so low that one could hardly count the beats. But as a general rule a pulse that is feeble, and running from 110 upward should be viewed with suspicion, and the fast broken.

The wrong mental attitude is also a danger signal. When one becomes afraid of the fast it is usually advisable to break it. Of course, there may be some exceptions to this rule, but as already stated, prolonged and enforced abstinence from food is not usually the cause of the death of those who are shipwrecked, or forced to fast for other reasons; it is really the mental attitude—the idea that to go without food for a certain period will cause death. It is the mental fear that actually kills such persons. You can, therefore, rest assured that a satisfactory mental attitude is of very great importance, and you should assure yourself that you are doing the wisest and best thing in continuing a fast. This mental assurance on your part will carry you through safely and to your great advantage in virtually every instance.

Great weakness is not always a danger signal, though in some instances it is. As stated previously, this weakness is usually caused by effete poisonous material in the circulation. When, however, after exercising, breathing, and walking, this weakness does not partially disappear—when one finds that he is compelled to take to his bed, I would advise that the fast be broken. The weakness may not be a danger signal, but at the same time, it would be wise to discontinue the fast under such circumstances.

I have known fasters whose will power was too strong. I have heard of instances where fast would be begun, and in spite of every symptom the faster would continue it, in some instances even to a fairly prolonged period. Fasts of this kind are always detrimental. There is a certain period in a fast where the healthy tissues of the body begin to be absorbed, and this process gradually lessens vitality. When the body is thoroughly purified and cleansed this is the time when the fast should be broken. In nearly every instance, however, where fasting has brought disastrous or devitalizing results it has

come about through improper and unscientific dieting and treatment following the fasting régime. I now recall two cases, especially, where fasting apparently brought on permanent invalidism; that is, the persons to whom I refer would say that fasting had been the cause. But in both instances the fasters were taken in charge by regular medical practitioners, and their continued weakness was caused entirely by the treatment that was administered. I would therefore especially warn fasters against the treatment prescribed by medical men who have not the slightest knowledge, either of the effects of fasting, or methods of breaking the fast. The medical profession not only discourage the fast, but have little or no knowledge of its physiological processes, and as for securing actual benefit from a fast, they consider such a proposition preposterous. There are some medical men who have gotten away from drugging and have begun to study the theory of cure that we advocate, and the judgment of such men could no doubt be relied upon. But doctors who have not got beyond their pill boxes are actually dangerous to anyone who has followed the fasting process, if he is compelled to seek aid because of his weakened condition. Under such circumstances it is far better to rely on one's own judgment, and his own idea as to what is best for him than to confer with, or adopt the advice of, one whose every suggestion is liable to result in added injury. I am positive that if these two cases had been handled by one who was familiar with the fasting process both of them would to-day be enjoying buoyant health as a result of their abstinence from food.

It is certainly possible to carry the fasting too far and that is my principal reason for confining most of my patients to short fasts. I am sure of being on the safe side under such circumstances. Furthermore, the various methods that I use in connection with and following the fast, help to purify the blood and build up the vitality to the highest possible degree; therefore, it is not especially needful that one continue the fast "to the finish," where these methods are followed in detail.

In fact, as I have often stated, even fasting itself is not absolutely necessary to the cure of ordinary troubles. Physical exercise, following a wholesome diet, stimulating the spinal column and all the various methods of Physcultopathy, for adding to the general vitality will usually bring about the desired results without fasting. These results, however, will be materially hastened with at least a moderate amount of abstinence in a dietetic way.

To be on the safe side during a fast, obey any unusual manifestations in the form of very great weakness which does not seem to disappear after following the suggestions I have made for overcoming it, as indicating the necessity for breaking the fast.

When the loss of weight runs up to two or more pounds daily after the first day or two, it sometimes indicates the need of breaking the fast. When the tissues are very soft, naturally they disappear with great rapidity during the fast. If a loss of two or more pounds continues for more than six or seven days then it might be wise to break the fast and attempt to replace the lost tissues with those of firmer consistency by means of exercise and other vital building processes before repeating the fasting experience.

As a rule the mind becomes very clear and impressions are intensely vivid during a fast. When there are opposite symptoms, that is, when the mind appears to be confused and the will weak and wavering, the fast should be continued with great care. If one is not under the advice of an expert it would be better for him to break the fast when such symptoms appear.

SLEEPLESSNESS DURING THE FAST.—Many persons find it very difficult to sleep while continuing a fast. In some instances there seems to be a feeling of tension throughout the entire nervous system, and it is difficult to get into that state of relaxation which is essential to slumber. In such cases it is well to try the free drinking of water, either cold or hot, whichever may be most strongly desired. If this does not produce the desired result a warm bath should be taken, the

patient remaining in the water ten or fifteen minutes. This will frequently have the quieting effect which is essential to bring on the unconsciousness of sleep. Another good remedy is to wet a bath towel in cold water, wring it out and fold to twelve or fourteen inches in width and then wrap it around the body from the hips to the chest. The towel should go all around the body, with a dry towel placed over it to prevent wetting of the bed clothing. A similar cold pack around the throat is often of immediate benefit.

Sleeplessness during a fast is often induced because of poor circulation. The feet in many instances become cold, and, no matter how much covering is used, it seems to be difficult to maintain a comfortable degree of warmth. In such cases a little more covering or a feather pillow placed over the feet will be the means of maintaining the proper degree of warmth. If, however, this does not bring results, it would be of advantage to place hot water bottles or hot irons, wrapped in cloths, at the feet. This will quickly bring a comfortable degree of warmth, and will draw the blood to the extremities, thus helping materially to induce sleep. One can adopt this remedy as a means of inducing sleep, even in some cases where the feet do not seem to be especially cold, but simply where there is a slight inclination toward chilliness. The warmth will draw the blood from the upper parts of the body, and, though one may have been tossing about for hours previously, this simple remedy will bring almost immediate relief.

Many fasters get the mistaken idea that, because their circulation seems poor, during the fast, they must close their windows tightly to exclude the outside air, both day and night. This is a very serious mistake, for, the supply of oxygen being materially lessened, it is impossible for the body to secure its full quota of warmth and energy from this particular source. At all times one should endeavor to secure a plentiful supply of fresh air when he is fasting. In other words, while he is living on air he must see that it is the very best quality and the largest quantity he can secure, and the more nearly he

can sleep out of doors the better will be his circulation and the less he will be bothered by the unpleasant symptoms often connected with a fast.

One should keep in mind, however, that while fasting not nearly so much sleep is required. The energies of the body are not used in the digestion of food; therefore, in many instances, one will frequently be thoroughly satisfied with from four to six hours' sleep, while under ordinary circumstances from seven to nine hours would be essential. He should therefore not worry in the least in case he is not able to sleep as much during the fast as he does ordinarily.

The only variation in experiences of this kind is where one has previously suffered from insomnia. Under such circumstances the fasting regimen often brings results exactly opposite in nature. After fasting a few days one begins to sleep more naturally, and the hours of sleep materially increase. There is really no better remedy for sleeplessness than fasting. It ultimately quiets the nerves, harmonizes the bodily activities, and remedies functional defects. However, relief from insomnia must not be expected within two or three days. Sometimes it will take from seven to ten days, or even longer, to bring about definite and satisfying changes for the better.

THE EARLY DAYS OF A FAST.—It is safe to say that the first few days of a fast will be the most troublesome. This is to be expected. In the breaking up of any habit, even though it be a perfectly natural and healthful habit, there is bound to be some disturbance until the mind and body adjust themselves to the new conditions. In the case of the appetite, which our civilized habits and customs of over-eating and our false conceptions have so long made unnatural, it would be unreasonable to expect the complete over-turning of its control without the body being in some way discommoded and made uncomfortable. Dizziness, nausea, spots before the eyes and an empty "gone" feeling, are the chief symptoms, as related in the experiences of thousands of those who have fasted under my control. For two or three days, possibly, these conditions will exist, then the abnormal desire for food

and "goneness" will give way to a feeling of disgust for all food. There are times, however, when the appetite persists to the end of the fast, and the faster longs for foods to which he has been used. But this is not a very common experience.

About the third or fourth day, when the disgust at the thought of food makes its appearance, the tongue generally becomes coated with a thick, yellowish white fur which it retains almost during the whole time of the fast. The breath becomes foul, and the faster's mouth is in a state that is both disagreeable and disgusting. These disagreeable conditions are most hopeful signs, for they not only indicate the offensive condition within, and reveal the disgusting state in which the alimentary canal has been reduced, but they also signify *that the processes of elimination of the disease are rapidly going on.*

As I have already explained, the secret of the coated tongue and foul breath during the fast is that after one has gone without food for a few days, the alimentary canal practically changes from an assimilative organ to what might be termed an organ of elimination. In other words, the impurities and poisons lodged in the body and seeking an outlet use the alimentary canal for this purpose. The coated tongue, therefore, is but an indication of the condition of the whole intestinal tract, and, until the process of elimination is complete, this unpleasant symptom will continue. As soon as it disappears, we have one of the clearest indications that the process of poison elimination is completed. As soon as this occurs the normal appetite for some specific form of healthful food returns and the tongue becomes clean and the breath pure and sweet.

It should be borne in mind that experiences vary considerably in fasting. In matters of detail no two experiences seem to be exactly the same. Even fasts of the same length of time by the same individual will reveal marked differences. Hence no general statement should be accepted as to the effects of a fast without bearing in mind these individualistic variations. But as to the ultimate results of the fast all ex-

periences of all people, almost without an exception, agree. This is one of the great mental satisfactions of a fast that, no matter how different your experiences may be from others, the ultimate results of the elimination of disease, the return of buoyancy and vigor, the clearing up of the mind, and the restoration of the normal hunger, are invariably the same.

One of my correspondents once wrote as follows: "You advocate fasting as a 'cure-all'; why does the omission of one meal cause a violent headache, if fasting is so beneficial?" This is a specimen of the reasoning of many people and is on a par with the intellectual capacity shown by the traveler who, having been told that Southern California was a land of sunshine, when he found it raining on his arrival at Los Angeles, did not leave the station, but purchased his return ticket and returned to the East. I replied to this correspondent as follows:

"The mere fact that the omission of one meal causes a headache is ample evidence that instead of missing one meal, a dozen should be missed; for this headache is caused by the slime, or the remains of fermented food or other impure matter that has collected in the stomach or intestines, or has remained there from the preceding meal, and, as no food is introduced to excite the flow of gastric juice or to dilute this impure matter, it is naturally absorbed by the circulatory system, and in its elimination, one of the results noted is a headache."

All of those who have tried the fasting cure for disease, know that for a few days they will frequently have a fever of more or less intensity. And nothing indicates more strongly that the purifying process is under way than this one symptom. It is one of the means adopted to burn up or eliminate the rank impurities of the body.

In the earlier days of the fast the decomposition of the surplus food in the intestines, and the activity of the organs of elimination, often produce large quantities of gas which will sometimes distress the patient with severe colicky pains. Under such conditions a hot enema should be used, and proper manipulation be given the stomach, bowels and spine. Hot

water applications, either in the form of hot flannel fomentations, or a hot water bag, placed over a towel wrung out in hot water, will afford relief.

In many cases there will be a feeling of chilliness, though the thermometer may not reveal any marked variation of temperature. This chilly sensation is purely the result of nervous excitation owing to the activity of the organs of elimination, and it need give no uneasiness, as it completely disappears as the fast continues.

The far reaching influences of a fast can be understood when it is found that even the ears and the eyes are most beneficially affected by it, though at first the symptoms of change may produce distress. It is not unusual for patients to experience a ringing sensation in the ears, or a partial deafness, or a filling up of the ears, as when one rapidly ascends to a high elevation. These latter unpleasant symptoms may be removed by finger massage of the muscles surrounding the ear, and the application of a little rather warm water (98 degrees), by means of a soft rubber syringe. The force of the water must be very gentle, or injury to the ear drum is liable to occur. If wax accumulates and does not come away naturally, the best way to remove it is to empty the air out of a bulb syringe, and then, applying the tube well inside the ear, release the pressure on the bulb. The suction thus caused will gradually draw out the wax and relieve the patient.

Blurring of the eyes and the presence of irritating spots is a common experience, but as the fast progresses these disagreeable symptoms disappear, and it is one of the delights of all patients who have suffered from weak eyesight or from any defect of vision, that the fast nearly always causes such a change for the better as to enable them to dispense entirely with glasses that may have been used for many years.

It is not an unusual symptom during the first few days of the fast for the patient to experience a rising temperature and to feel feverish. In some cases this continues with slight fluctuations during the continuation of the fast. This condition need not occasion alarm. It is merely an indication of

the great struggle the body is undergoing in the exercise of its self-curative power. If a man were fighting for his life with a wild animal or a midnight assassin, one would expect his pulse, his respiration and his temperature to increase mightily. This would be but the sign of the intensity and determination put into the fight. It is exactly the same with the subconscious or involuntary powers of the body. Without any exercise of will on the part of the patient, the functions of the body seem to do their own thinking and willing, realizing that they have to fight for life; hence, increase in temperature. As conditions improve the temperature returns to normal.

Now while this is the case with many patients, there is another class in which the fast works in the other direction. These are generally thin, pale, anemic persons. In their case it is not uncommon to find a reduction in temperature of a degree or two. Possibly this drop in temperature is caused by the lack of stimulation that follows abstention from food. It need cause no uneasiness. Whenever the vitality of the body is lowered, as in long-standing cases of general enfeeblement, the temperature may be expected to drop a degree or so, while in acute diseases, or in persons of fleshy habit, fat and full blooded, the temperature will invariably rise. In all cases, however, when a fast has accomplished its work the temperature will return to normal.

Another disagreeable symptom often manifests itself about this time. Many people suffer regularly from the fact that the perspiration that exudes from the body gives out a most unpleasant odor. To the expert certain diseases can almost certainly be detected by these odors. Most people suffering from mental troubles give forth unpleasant and yet distinctly definite odors. So marked are these that I have a friend who is able to diagnose, with startling accuracy, the condition of almost any patient merely by the smell of the body. During the fast these unpleasant odors are exuded more abundantly and become more perceptible. This is another proof that the eliminative processes are active, and that the skin is taking up the work with vigor and helping the patient along to health.

In the more troublesome cases, on about the fourth or sixth days the saliva begins to change character, and the discomfort in the mouth is increased by the presence of a thick, viscous, sticky saliva, sometimes frothy and generally offensive, which gives one the feeling of having what habitual drinkers call the "cotton mouth." At such times nausea and vomiting are not uncommon, and I have known many cases where, in a prolonged fast, patients have vomited for many days in succession, thus getting rid of a great deal of poisonous matter that it is well to eliminate as rapidly as possible.

At times the faster will feel a keen pain under the shoulder blades, similar to that experienced by those who suffer from certain forms of dyspepsia.

In some cases instead of the mouth being "cottony" there is an acid taste in the mouth and the saliva flows freely. Canker sores may appear and "cold blisters" on the lips. In cases of those of a bilious temperament, who are what we call "good livers," who have lived on rich, luxurious foods, over-eating and giving themselves up to the pleasures of a too diverse and complex dietary, there are certain distressing symptoms that generally occur. The over-worked and congested liver, over-charged with bile extracted from the circulation in unusual quantities, pours it into the intestines in large amounts. The ordinary action of the intestines having largely ceased, owing to the withdrawal of food, the bile is not removed as fast as the liver pours it out. Under such conditions the process known as anti-peristalsis takes place. This is the reversal of the ordinary downward moving action of the intestines, and the bile is forced backwards into the stomach. The result can readily be conceived. Nausea and vomiting at once occur, and the patient rids himself of a large amount of greenish-yellow bile, of foul odor. To one who was unacquainted with the reason for this such a symptom would seem to indicate that he was growing worse instead of better. But there need be no occasion for alarm or uneasiness. While the process is extremely disagreeable, it is a necessary process of house cleaning, and the patient should submit with as good grace as pos-

sible. I have known cases in which this vomiting of bile has continued for as long as three weeks, but where the ultimate results surpassed the highest expectations of the patient. His digestive tract, liver, stomach and brain responded to the fast so beautifully that he said he felt as if he had been made over again.

In the case of people of a nervous temperament, or those who are naturally nervous, many of the disagreeable symptoms I have named do not appear. These people generally suffer, however, from an increase of nervousness and of irritability. Their friends should exercise a little more consideration for them at these times, remembering that their "bark" means nothing, and that before long both "bark" and "bite" will disappear. Very few fasters, however, escape, if they have suffered in the extreme, from the large and disagreeable bowel discharges referred to in my chapter on the use of the enema.

DAILY SYMPTOMS OF THE FAST.—In order that the prospective faster may have an intelligent idea as to his feelings and experiences, especially during the earlier days of his fast, I wish to give him the experiences of others so that he will not be alarmed at any of the symptoms he may display. At the same time it must be borne in mind that no two experiences are exactly the same. As I have elsewhere remarked, the same individual may experience entirely different feelings with two separate fasts. For instance, I have sometimes had a severe headache on the first two days of a fast, while at other times for the first two or three days I have felt a freedom and clarity of intellect that were as delightful as they were surprising. Hence, let me urge upon the beginner that he be not alarmed at any symptom he may experience. There can be no danger, hence there is no cause for fear.

The patient should weigh himself before entering upon his fast, and it is a good plan to keep a diary noticing his changes in weight, and all the symptoms he experiences. Naturally there will be a decrease in weight for several days. This, however, need cause no alarm. After the first week, if one has entered upon a prolonged fast, he may be very much

surprised at the figures the scales will show. In many instances one may actually appear to gain in weight after having fasted for several days. This is usually caused, however, by increasing the amount of water he is drinking, and upon decreasing the amount of this fluid to that which he has previously been taking, he will ultimately find there has been an average daily loss of tissue.

During the first day of the fast it is not at all uncommon to lose from two to five pounds. This loss is of course more noticeable in the abdominal region. The next day the loss is usually reduced to one or two pounds, and each day thereafter from a half pound to a pound. Naturally the amount of weight that one will lose will depend largely upon the exercise that he is taking. If one is taking little or no exercise, but is lounging around, the amount of weight lost will be noticeably less than if one leads a very active life. A walk of several miles each day will materially increase the loss of weight. In an ordinary fast, lasting from two to four days, but little of the bodily tissue is used unless one is very active. The loss is almost entirely confined to the abdominal regions. The body calls upon the surplus nourishment and food located in this part first of all when the regular eating habits are discontinued.

It will also be found that both the temperature and the pulse may fluctuate. In some cases these fluctuations are very marked; in others they are scarcely perceptible. It is interesting, however, to note these. For instance, in the case of one gentleman who fasted for 31 days, his temperature when he began was 98 2-5; it remained at this point the first four days. The fifth and sixth days it dropped to 98. The seventh day it returned to 98 2-5. It remained at 98 and 98 2-5 until the twenty-first day, when it fell to 97 2-5, returning the following day to 98 2-5, then falling to 98, where it remained until the last day of the fast, when it fell to 97 2-5.

On the first day of the fast this gentleman's pulse registered 78; the following day 72; the third and fourth days 74; fifth and sixth days 72; the next two days 74; the following day

72; while on the tenth day it rose to 80, to descend to 61 on the eleventh day; 64 on the twelfth day; back again to 72 on the thirteenth day; to 68 on the fourteenth day; fluctuating between the 60's and 70's until the twentieth day, when it fell to 54, from which it again ascended by a fluctuating scale, until on the last day of the fast it was 68. In commenting upon these fluctuations of the pulse, however, the physician in charge of the case says: "The fluctuations of the pulse, depending as they do upon the amount of exercise taken immediately previous to the examination, have no general significance. The day the pulse stood at 80, for instance, Dr. Gayer had just come in from a two mile walk with his dogs when he was examined. The next day, when the pulse was 61, he had spent the morning on the lounge, with nothing more to excite him than the newspapers."

I will now take the days in their order and give the symptoms that most commonly appear, with such suggestions as may enable the faster the better to understand what is going on within his own body to produce these symptoms.

First Day: Fasting being a new experience it is possible that the beginner will be somewhat self-conscious and experience some slight trepidation. This is by no means universal, however, for many enter into the fast fully assured of all its benefits and without the slightest hesitancy. This is the ideal mental condition, and the nearer one can attain to it the better.

One patient describes his first day's experience as "simply a faint hungry feeling." When one has been in the habit of satisfying the cravings of appetite three times a day, it is natural to assume that the appetite will not be subjugated without a struggle, and the first or second days are generally the important ones in this conflict. Many people have experienced a headache by simply missing one meal, so that it is no uncommon thing for the patient to suffer in this regard on the first day. Sometimes there will be the ordinary movement of the bowels, for as yet the body has not begun to experience any alteration in its habitual movements.

One of our readers who has on several occasions fasted for one or two days, found himself a few years ago suffering from a severe cold. He says that the first three days he suffered acutely from the omission of the accustomed three meals. On the fourth day the gnawing at the stomach ceased entirely. Even when he returned to eating, his first meal of two oranges was not particularly relished; nor was the second one, which consisted of wheat grains that had been simmered for hours in milk. Even the third meal was disappointing, but after the fourth meal hunger appeared in full force. Undoubtedly in his case, had he followed the fast until normal hunger had returned, it would have been better for him, and he would not have experienced this lack of genuine desire in the first few meals.

Second Day: The patient before referred to thus describes his feelings on the second day: "An all gone feeling, but no excessive hunger; great belching of gas; slept well until about 2 A. M." This dizzy feeling, slight headache, belching of gas and all gone feeling, is a pretty general experience. Sometimes there is an attack of colic with considerable wind in the intestines.

Third Day: The patient quoted before says: "Rather weak, but not excessively hungry; belching continued; slept uneasily; mouth very foul and sickening." This experience is common. The coated tongue, foulness of breath, and unpleasant taste in the mouth oftentimes become very prominent on the third day. The coated tongue shows a foul condition of the alimentary canal throughout its entire length, and indicates that the intestines are now throwing off or removing the poisons that are in the blood. While these symptoms are exceedingly unpleasant, they are, to the physician or the expert, most gratifying, as they reveal that the process of elimination of disease has fairly begun. Very often at this time, and depending largely on virulence of the disease to be combated, the patient experiences a change from the imperative demands of his appetite to a surprising repugnance against all food. The thought of it becomes sickening, and, while

there are variations of this feeling, as a rule, abnormal appetite is supplanted by disgust at the thought of food during the whole period of the fast, until normal hunger asserts itself.

One patient whom I advised to fast, wrote me as follows in regard to his third day's experience: "I have tried twice to fast since Christmas. The first day I felt better, and better still on the second, but the third morning I had nausea, was dizzy, became faint and staggered, and tried to vomit. I ate a light lunch and the symptoms disappeared. Can you advise me how to overcome this difficulty?" To this I replied as follows: "This is a common experience in fasting. The first day no heavy exercise should be taken, but one should walk six or seven miles, if the strength is sufficient, and practice deep breathing. Pure water should be taken freely. The sleeping apartment should be thoroughly ventilated. When the feeling of nausea and dizziness appears, drink two or three glasses of very hot water and take deep inhalations. Unless there is distinct hunger the fast should not be broken at this point, but should continue until hunger appears." The best of all remedies for overcoming nausea during a fast is acid fruit juice, especially lemon juice. It is best to use this straight—that is, undiluted.

The weakness, dizziness, and nausea so often experienced are attributable to a withdrawal of the stimulation that one has been accustomed to by the habitual use of food. While food stimulation is very different from alcoholic stimulation there are some points in which they seem to be similar. One of these is that disagreeable symptoms invariably occur when the person accustomed to improper or over-eating, misses one or more meals. The lack of the stimulation causes the unpleasant symptoms. But, as I have shown, these very speedily disappear, and, after the body has readjusted itself to the absence of the stimulation that comes from food and food poisons, the patient's real strength and vigor begin to assert themselves. Then he begins to know the difference between a stimulated body and a healthy body. The brain becomes wonderfully

clear; the body grows into a recognition of its own power; languor, disinclination to mental or physical work disappear, and one enters upon his daily duties with a vim, an energy and a delight that betoken the possession of the perfect and abounding health which is every man's birthright.

In the case of the patient whose experiences led to these comments it can now readily be seen that his nausea, dizziness, staggering and desire to vomit, were simply the result of the organs of elimination becoming active and throwing out the causes of disease. Instead of eating at such time, the faster should the more resolutely hold to his self-denial, for he has reached the critical time, and to eat now is to lose much of the advantage he has already gained.

Suppose a case where a man is suffering from some poison-eliminating. On the third or fourth day, when the process of elimination has thoroughly begun, he might show marked aggravation of his disease. But it is one of those cases where one grows worse in order to improve, and he would be foolish in the extreme, who, undergoing these experiences, were to fail to read his lesson aright. Instead of being discouraged, such an one should feel mightily encouraged, and persist in the good endeavor, realizing in this as in all other good things that "he that shall endure to the end alone shall be saved."

The same kind of distressing symptoms might well be expected in cases of typhoid, or typhus fever, or any of the unclean diseases, when the body is making strenuous efforts to get rid of the accumulated filth. These distressing symptoms may come earlier or later during the progress of the fast.

Fourth Day: The patient before referred to thus records his symptoms of the fourth day: "Enema in morning relieved mouth, and I slept several hours afterward; no hunger, but mouth so bad at evening that I took another enema, and was relieved in bowels and mouth, which latter was nigh insufferable before the enema. Slept well until 2:30 A. M."

In a case where a short fast has been deemed all that was

necessary, there may be none of this experience of disagreeable feeling in the mouth. These symptoms depend entirely upon the virulence of the disease that is to be expelled. When the stomach has been in fairly good order, and the alimentary canal reasonably normal, very few of these unpleasant symptoms will be experienced. In one case that I recall now there was scarcely any coating of the tongue, and the taint to the breath was scarcely perceptible, and yet the patient was suffering from a bronchial cough that was hard to eradicate.

Fifth Day: Patient before quoted says: "Continued foulness of mouth; it is so distressingly foul it makes me sick 'all over'; enema at night; slept well part of the night, but restless the remainder; weight two hundred and fourteen pounds. Trip in street cars very fatiguing."

Sixth Day: This patient thus describes his sixth day: "About the same as yesterday; feeling very weak; visited doctor by going on street cars."

Seventh Day: Here is his experience for the seventh day: "Much better in every way; stronger, and bad taste is passing away, slept fairly well last night; weight two hundred and ten pounds; not hungry since the third day."

As I have already shown, I prefer several short fasts, as a rule, extending from six to seven days, rather than a prolonged fast. But there is no question that in many cases the prolonged fast, or as it is commonly termed, "fasting to a finish," is clearly indicated. Those who have been advised to take a fast until the tongue clears, the breath sweetens and normal hunger asserts itself (which are the chief natural signs that the work of the fast has been accomplished), need not be alarmed or surprised at any experiences they may have, unless they materially differ from those already recounted and those to which I will now briefly refer. Indeed in some cases these "natural signs" never appear, no matter how long the fast.

As a long fast continues, the patient may be distressed by spells of weakness and dizziness on arising in the morning. On the ninth and tenth days, or later, a very bad taste may come into the mouth. Perhaps there may be natural move-

ments of the bowels at any time up to the twentieth day and the mouth will invariably show signs of clearing after these natural bowel movements. It is a surprise to most people that the almost daily use of the enema will bring away great quantities of feces. Where nothing has been eaten, it is a question to the ordinary lay mind where this feces comes from, and I have elsewhere fully answered the question. It is not uncommon for patients to become very much depressed, even discouraged, as the fast continues.

This is a common experience. Long-continued sickness of any kind is pretty apt to bring about this condition, and where one has struggled and battled for a long time in vain, every new endeavor that does not immediately produce results is liable to plunge one into the depths of depression. Then, too, while such active elimination is going on the consequent weariness and exhaustion are such as to add to this feeling. Do not, however, yield to such a feeling and become disheartened. Look ahead! Realize that the good work is going on, and that you will soon reap the benefit in perfectly restored health.

Sometimes mornings, after these fits of depression, patients wake up feeling quite bright and cheerful. Then as the day progresses they again become depressed, especially if there is a growing sense of nausea. Whenever the mouth feels bad and the stomach irritated, depression is no uncommon symptom. In spite of the bad condition of the mouth, however, patients generally sleep well at night. This is always a good sign and the more sleep they can get the better.

Now and again, when the fast approaches to the thirtieth day, the bad taste of the mouth will increase to such an extent that there will be a strong inclination to vomit. This is nearly always removed by a hot enema. Slime will sometimes come into the mouth and gagging feelings, but do not be alarmed if one vomits a large amount of this slimy mucus, because it indicates that all the powers of the body are at work upon the elimination of the disease. Very often there is no "let up" to the unpleasant symptoms up to the very day when normal

hunger appears, but as a rule, if the tongue is clear, the foul odor of the breath has disappeared, and the enema ceases to bring away any more feces, one may conclude that the fast has about completed its work. In the case of Mr. Davis, recorded by Dr. Hazzard, it should be stated that he was a man sixty-one years of age, who had suffered from paralysis of the entire right side for over two years. He was totally incapacitated for active manual labor of any kind, living in dread of a second stroke, and suffering a strange and unusual mental depression upon any slight over-exertion, which was always accompanied by great drowsiness. At these times he would sleep without intermission from thirty to thirty-six hours. His mentality was impaired. His eyesight seriously affected. His speech was impeded. His right hand and arm were clumsy and weak. These were the conditions under which he began the fast. Normal hunger asserted itself on the fortieth day and the fast was thereafter broken. For three days he ate very sparingly, taking the following food during that entire period: One pint of unfermented grape juice; the juice of three oranges; one pint of oyster broth; one large apple; one large sweet potato, baked; two slices of whole wheat bread with butter; one small dish of Pettijohn. On this food he became stronger, and the offensive saliva that had displeased him, disappeared. He was sleeping well and feeling better generally, and the use of his muscles had been entirely restored. Some time thereafter his tongue coated again, and the offensive saliva reappeared, clearly indicating that the fast must be continued if permanent results were to be obtained. After a light breakfast he began a supplemental fast, the daily experiences of which were as follows:

First Day: "Felt strong and well generally except the bad taste in my mouth; excessive flow of saliva; great hunger at 5 A. M.; slept well."

Second Day: "Stronger than at any time since the first week of my long fast; walked downtown twice; excessive flow of saliva continues, but not so offensive as before; no hunger."



Dr. Linda Burfield Hazzard.

Third Day: "Quite strong in the forenoon, but not so well in the afternoon; saliva not so offensive; enema with a quantity of feces at night; slept well."

Fourth Day: "Strong and well in the forenoon, but rather weak and depressed in the afternoon; foul saliva continues; to bed and slept well."

Fifth Day: "About a repetition of yesterday; went walking twice during day; enema at night with but a color of feces; slept well until 3 A. M."

Sixth Day: "Vomited a quantity of bile twice to-day; natural passage from the bowels at night, very foul; slept well until 4 A. M."

Seventh Day: "Rather weak and depressed in the morning; hunger with nausea evident; slept well."

Eighth Day: "Hunger plainly in evidence, and fast was again broken, this time permanently. Weight one hundred and seventy-four pounds."

The result of these two fasts, one of forty days, the other of eight days, was complete cure. Writing to his physician he says:—

"I am cured of paralysis; my mentality is clear and normal; my entire digestive system is apparently perfect; my vision is better than for years; my hand and arm are strong; I have no dread of a second stroke; I have no sleepy spells; I feel lighter all over; and, when weary, I am quite refreshed and ready for exertion after a short rest; I feel younger, and my neighbors say I look it; I have been working in St. Paul, ten miles distant, for over a month, traveling to and from that city daily; and I am, in every way, more robust than I have been since boyhood."

That my readers may not think these long fasts extraordinary, I wish to assure them that they are so common at the Healthatorium, and elsewhere under my guidance, that my assistants and myself regard them as almost every day

affairs. I have had hundreds of such cases, and personally do not consider it important enough to keep any daily record of the various symptoms of each case. Naturally we watch the daily progress of the fasters with much interest, but the experiences are so general and common that we know just about what to expect and what ultimate results to anticipate. These are so sure and certain that the thought of failure never enters my mind. Where patients follow the few simple instructions and are not led away by outsiders who do not understand fasting and its symptoms we are as confident of the results as of the reliability of the multiplication table.

In the case of Mr. Richard Fausel, to which I have already referred, who fasted under my directions for ninety days, there was no regular daily record kept of his symptoms, but in telling the story in *Physical Culture* the following facts were gleaned which will be of great interest to those who regard a ninety-day fast as little less than a miracle:

"The motive for this fast was a desire on the part of Mr. Fausel to relieve a dropsical swelling of the legs from which he suffered, and to rid his body of surplus weight. The results of the fast were fully equal to expectations, and in addition to remedying the derangement which caused the appearance of dropsy, the experience resulted in the loss of seventy pounds of surplus avoirdupois.

"The man who has thus abstained from food for a longer period than has ever been credibly ascribed to any human being, is a former hotel-keeper. Mr. Fausel had previously tested the efficacy of fasting as a means toward improving his physical efficiency, and reducing his body to normal weight.

"During this period his bowels moved nearly every day, and to encourage regularity in this respect, Mr. Fausel used the juice of one-half a lemon in a glass of water morning and evening. He alternated this by chewing a piece of rhubarb sufficiently to extract the juice, and then rejecting the pulp.

"He slept very well during the entire fast, and the only inconvenience he felt was a hunger that manifested itself during

the first week. After this it disappeared and did not return at any time during the remainder of the fast.

"After forty days had elapsed, the monotony of idleness became distasteful and he took the position of steward in the *Bernarr Macfadden Western* headquarters. In this capacity it became necessary for him to taste various food preparations from time to time, but no nourishment entered his stomach, except on one or two occasions, when some small particles of food were accidentally swallowed. These caused a great deal of distress and nausea, and were immediately regurgitated. On the fifty-ninth day of his fast Mr. Fausel engaged in a wrestling contest for about ten minutes, and exercised with dumb-bells weighing from about fifty to seventy-five pounds, and lifted chairs and other heavy objects for about ten minutes longer.

"During the period of his incumbency as steward, Mr. Fausel was kept busy with his duties in the kitchen and dining-room, with the exception of taking a daily walk of an hour or two. In conjunction with the other exercises mentioned, this constituted his total activity. He lost on an average nearly one pound daily up to the seventieth day of his fast. After that stage his weight diminished very slowly.

"During the last few days of his fast Mr. Fausel was unable to drink water with the lemon juice, and on the ninetyeth day, when he broke the fast, took a half glass of water with the juice of half an orange in it. This was regurgitated.

"The stomach was apparently unable to tolerate the least nourishment for the first three or four days after the fast. After that period he was able to retain in his stomach diluted fruit-juices which were increased in amount until the tenth day after breaking the fast. Previous to taking solid food, Mr. Fausel took daily a few sips of the juice of spinach. The first solid food taken was in the form of raw spinach, seasoned with a little lemon juice. Barring a few minor disturbances, such as nausea and aversion to certain articles of food, he was, in a few days, able to return to his regular form of diet.

"During the fast, rheumatic pains in the legs, hips and arms occurred at about the fiftieth day. These pains disappeared in a few days and were succeeded by nose bleed, which continued for about one week. About the sixtieth day, there was a craving for liquor, which persisted for about three days, and one week later an almost intolerable desire for tobacco manifested itself for about three days.

"This extended fast is a remarkable example of the power of the body to sustain itself upon the excess of fat which results from over-eating, and failure to properly control the appetite. When one can exist for ninety days without solid food, then surely only one whose constitution is so devitalized as to make fasting inadvisable, need expect anything but beneficial results from the bodily house-cleaning which fasting induces."

DIVERSITIES OF EXPERIENCES, YET UNANIMITY OF RESULTS.—From all that has been shown in the foregoing daily experiences it can well be seen that people suffering from different diseases will necessarily have different experiences. Differences in temperament and in mentality will also have their effect, some people doing easily what others would find exceedingly difficult. Some people are nervous and easily excited, others are phlegmatic and hard to move, and upon these different types of people the fast will not work in exactly the same way.

While I believe that all diseases may practically be resolved into one disease, namely—impurity of the blood, the manifestations of this disease are so manifold and various, and affect different people with such great diversity, that it is but natural to expect that in the processes of elimination their experiences will be equally diverse. This point cannot be too strongly emphasized.

PERSONAL EXPERIENCES OF THE FAST. I have already referred to the thousands of cases that have undertaken the fast at my advice either directly or indirectly. Naturally my readers will be interested in the personal experiences of some of these individuals. While in slight details experiences differ, just as

the personalities and the way they suffer differ, yet the results, almost without exception, are exactly the same.

I have therefore decided to give a number of experiences of people from all parts of the country who have suffered from different diseases and who have been cured principally by means of the fast. As is well understood, where other methods have been followed, they have never been other than the simple methods of Physcultopathy. I have never advised drugs in a single case that has come to me for advice, and only in a few desperate and apparently hopeless cases have called upon the surgeon. I wish this point to be distinctly understood in regard to my habitual attitude. When other methods are named as having been used in addition to fasting, these invariably refer to nothing more than the simple principles so often enunciated in these pages.

It will also be observed that I have occasionally quoted outside cases. This has been done with a purpose. I want my readers fully to understand that it makes no difference who prescribes or follows the fast and the other simple methods of Nature in the healing of disease. The results are invariably the same. Hence, while I could have given, under each heading, the experiences of scores of my own patients, I have preferred to introduce the experiences and results of a number of outside cases with which I have had little or nothing to do.

THE FAST FOR CATARRH AND STOMACH TROUBLES.—There are few people in the United States who do not suffer somewhat from one or the other of these distressing and *altogether unnecessary complaints*. A typical case in point is that of the Reverend Matt. J. Duven, who was formerly pastor of the Grand View Reformed Church, Armour, South Dakota. Mr. Duven had completely broken down in health, and his own physicians were unable to help him. He had read *Physical Culture* and some other of our literature so he finally decided to fast. His case, however, was so serious that he came to see me, as he preferred to have me advise him in person than follow the fast alone. I continued him exactly as he had

begun, giving him the additional aids in our simple methods. Here I let him tell the results, after six weeks of simple, natural, rational treatment.

"I fasted almost seventeen days. The amount of impurities eliminated was simply astonishing. After fasting eleven days I gained steadily in strength, and ever since that time have exercised regularly, and walked from two to five miles daily. I lost about twenty-seven pounds. Nine days on the milk diet increased my weight about twenty-two pounds. My hair has almost stopped falling out; my stomach trouble has practically disappeared; my eyes are stronger than they have been in years; my catarrh of the throat (which I have had as long as I can remember, and which troubled me greatly in preaching) is cured, and I am gaining strength. I am confident of being completely restored to health in a comparatively short time."

THE FAST FOR PARALYSIS.—Some time ago Mrs. E. H. Farrar, of Greenville, Plumas County, California, came to me for advice and help. She was a woman in what might be termed the heyday of youth, yet she was stricken with the dreadful disease—paralysis. She could not move any part of the right side of her body. Her right arm and right leg lay limp and helpless. When her disease first afflicted her she began to go the rounds of the medical profession. She tried doctors of all kinds. She did not improve, in fact, she gradually grew worse. She tried all sorts of remedies that were recommended. She finally consulted a few high-priced specialists, but her disease still clung to her with a tenacity which made her future dark and forbidding.

It was then that she came to me and began to fast and follow other Physcultopathic methods. In two weeks there were slight signs of life in the fingers and toes of the paralyzed side of her body. In a month she was able to take a few steps. She had to learn how to walk again, just as if she were an infant. When the ability to move around fully returned, her strength increased much faster, and in three months she was able to walk as easily as any adult in the possession of normal health.



The upper photograph shows Mrs. Farrar (whose experience with the fasting cure is described on page 1322) a helpless paralytic. The lower photograph, to the right shows Mrs. Farrar as she appeared after three months application of Phys-cultopathic methods, with her paralysis entirely cured.



A year after her return home she wrote me a letter from which I quote the following:

"It is now nearly a year since I left your institution, and I am confident that the cure effected there is permanent, as I am growing stronger all the time. For instance, to give you an idea of my general physical strength at the present time, I was recently able to pull my weight up with the strength of my arms, one being formerly paralyzed, until I 'chinned' myself. I was recently able also to raise a forty-pound dumb-bell high over my head with both hands, thus showing very emphatically the improvement that has resulted from following your methods. It is indeed delightful to be alive in every sense of the word once again, as anyone who has experienced being a cripple will readily testify."

I would that I could make people understand that it is not necessary for them to come to me for this aid. I do nothing for the patient who will simply learn from Nature to follow her methods. It requires little knowledge, wisdom or education to fast, to eat slowly when one can eat, to eat simply, to get into the fresh air and sunshine, to exercise daily, to live purely in sight of God and man, to do good to all with whom you come in contact. Certainly I try to make these simple propositions easy to follow, and suggest a few simple ways whereby the sick and suffering may aid and further the work of Nature, for there are the whole secrets of Physcultopathy.

THE FAST FOR PROLAPSED STOMACH AND BOWELS AND AUTO-INTOXICATION.—Any condition of prolapsus is speedily and surely restored to a normal state by fasting. Out of thousands of cases that have been treated I might quote many. That of Upton Sinclair is an interesting and important one. Similar to it is the case of the Rev. D. Wellesley Wise, who had suffered severely from acute attacks of gastritis and accompanying nervous prostration. At last he was compelled to give up his church and in despair went to one of the largest sanitariums in the country. There he was told he "might hope

to be considerably better in five years' time." In desperation, and as a last resort, Mr. Wise then decided to try the simple methods of Nature and came to me. Now let him tell his own story:

"In extreme nervous exhaustion and mental depression, so weak and emaciated that I could hardly creep around, I came at last to the Macfadden Healthatorium. I felt that my case was hopeless; afterwards, Mr. Macfadden inspired a little hope in me.

"I was in so hopeless a condition that I even contemplated suicide. I knew I would not do it in a sane moment, but I actually feared I should become unbalanced and commit self-murder. The few days preceding my treatment was the blackest time of my whole experience."

I immediately placed Mr. Wise on a series of short fasts, alternated with the milk diet, and used the ordinary methods of Physcultopathy. Here is the result:

"After fasting seven days I walked three miles with ease. After fasting sixteen days I took half an hour's vigorous exercise in the gymnasium in the early morning and then walked seven miles in an hour and twenty minutes, and felt so invigorated that I could have walked miles more.

"I have increased thirty pounds in weight, and I know the diet used is one of the greatest on earth for building one up in weight and strength and general health.

"My circulation is better than it has been for five years past. I am capable of more physical exercise and more mental effort than for years, and life, instead of looking forbidding and gloomy, looks to me inviting and rosy. I believe I have before me the best and most efficient years of my life."

Two years after writing the above Mr. Wise voluntarily sent me the following:

"Your circulation of my letter to you, with my hearty acquiescence, in your various publications, has excited widespread interest, which is evidenced by numerous inquiries I have received and continue to receive from all parts of this country and even from Europe and Asia. These inquiries in-

variably raise two points, first as to whether I really did gain such benefits from your methods as represented; next, if I have retained what I thus gained.

"It therefore occurred to me that a supplementary statement is called for, effectively to answer all these and other questions that may arise. On this account I want to request you, if you continue to publish it, to append to it the following additional statement:

"Having continued from that time till the present—the fall of 1910—to follow as regularly and closely as my calling and engagements admit, the régime of diet, baths and exercises prescribed by you, I have steadily improved. Never since I was a youth in my teens have I enjoyed such vigorous, abounding life as now.

"It is nearly two years since I entered your institution a miserable wreck and despairing of ever amounting to anything again in any way. In that time, thanks to you, I have practically renewed my youth. I am a new man. In the last year I have occupied the most responsible position and accomplished the most arduous and satisfactory work of my ministerial career. I am truly a 'wonder to many.'

"My present state of health and efficiency is a constant marvel to me and causes my heart to overflow with joy and gratitude.

"Gratitude for what I have gained and fellow-feeling for other distressed and discouraged ones who, as was the case with myself, have tried many physicians and so-called remedies, only to find themselves worse therefor, and to lose heart and hope, prompts me to tender you this testimonial, with the request that you publish it broadcast as in the instance of my previous verbal and unpremeditated talk at the 'Experience Meeting' in your Sanatorium."

Faithfully and gratefully yours,

D. WELLESLEY WISE,
Episcopal Clergyman.

I have no hesitancy in publishing these words from Mr.

Wise for the reasons that I have no nostrums to sell, no secret systems financially to exploit. My cry is a direct and simple one. As one in the wilderness of medical systems, drugs and anti-toxins, of artificiality and commerciality, of complexity and bewilderment, I lift up my voice and call: "Come back to the simpleness of Nature and be healed."

THE FAST FOR ABSCESES.—In 1905, Mr. C. Emerick, Jr., reported to me that he had completely cured himself, by means of a fast, of a swollen abscess on the cheek, which the physicians in vain had tried to cure. Though only 19 years of age his fast was forty-one days long, and he thus records his experience:

"The first week of the fast I lost twelve and a half pounds, and continued losing weight thereafter up to twenty-eight pounds; but when I resumed my meals I gained flesh in a remarkable manner.

"After thirty-five days of fasting the abscess began to disappear, and the feverish and inflamed



Mr. C. Emerick, Jr., who cured the abscess indicated by cross-mark on cheek by a fast of forty-one days.

conditions which had accompanied it also began to leave my cheek. I might state also that the duct of one of my eyes, which for a long time had been clogged with matter, ripened and opened in a natural manner, and soon healed, giving me untold relief. Before the fast I was troubled with frequent overflow of tears from the eye that I could not control. Since the fast I have got rid of this troublesome complaint."

THE FAST FOR A WEAK STOMACH.— In October, 1904, I received an interesting letter from Dr. A. M. Eidson, in which he related the story of a case under his supervision, where by means of a continued fast of fifty-one days, he transferred a virtually dead stomach into a powerful, healthy, normal organ. He thus describes the case:

“I was called upon to see Mr. M. N. Butler, of 1201 Kansas Ave., Topeka, Kans., a very intelligent man, ex-college professor, ex-editor, now author and newspaper and magazine correspondent. I found him much reduced, from one hundred and sixty to one hundred and thirty pounds. He had been a good liver, after our race habits of diet, three square meals a day, tea, coffee, animal foods, etc. He had been, as most of such livers are, cursed with catarrh, more or less, for years. His stomach seemed to be completely worn out. It seemed to go out of business. As usual, he patronized the ‘regular’ M.D., and patent medicines, etc., receiving but temporary relief.

“I recognized only one method of saving his life; that was, to give the stomach and bowels as well as the nerves and general system, a rest. Having lost faith in everything, and expecting to go very soon, he consented, recklessly, as he thought, to the treatment. Everything was at once proscribed but distilled water; as much of that was ordered as he seemed to want, or that the stomach would bear.

“At first but little water was borne, but the quantity was increased as the stomach had rested. He thus continued until the fifty-first day. All the time of this fast the thick, heavy, muddy-coated tongue had been as gradually disappearing, until at the fifty-first day we found it as clean and perfect as any healthy boy’s, and ordered him a breakfast for the morning of the fifty-second day of poached eggs on whole wheat bread toast, following with three regular but light, wholesome meals each day, and you ought to have seen how grandly his stomach resumed duty after its necessitated rest; and has since continued to be healthy.

"My patient avers that his boyish appetite returned after the fast, which undoubtedly saved his life."

THE FAST FOR DYSPEPSIA.—Shortly prior to the above mentioned case, Mr. E. R. Wilcox determined he would undertake, by means of a prolonged fast, to cure himself of a severe and advanced form of dyspepsia that the physicians had endeavored to cure without results. He had been driven to despair, and felt that his case was, from all ordinary standpoints, absolutely hopeless. Some of our literature fell into his hands and he thus wrote to me at the close of his sixty days' fast: "I now feel like a fighting cock. Have gained twelve pounds in fourteen days and can eat my meals without suffering for hours after with indigestion. To-day I will enjoy my first meal of vegetable soup. Four weeks ago I was so weak I could not whistle. Now I can talk as much as any woman. I take daily exercises and will soon be in excellent shape to do almost any kind of work."

THE FAST FOR THE THROAT TROUBLES OF A PUBLIC SINGER.—I have purposely given the above heading to this section, for, while the throat troubles of public singers are no different from those of other persons, they seem to be more serious because upon the clearness of the singer's voice and his freedom from throat trouble his professional life depends.

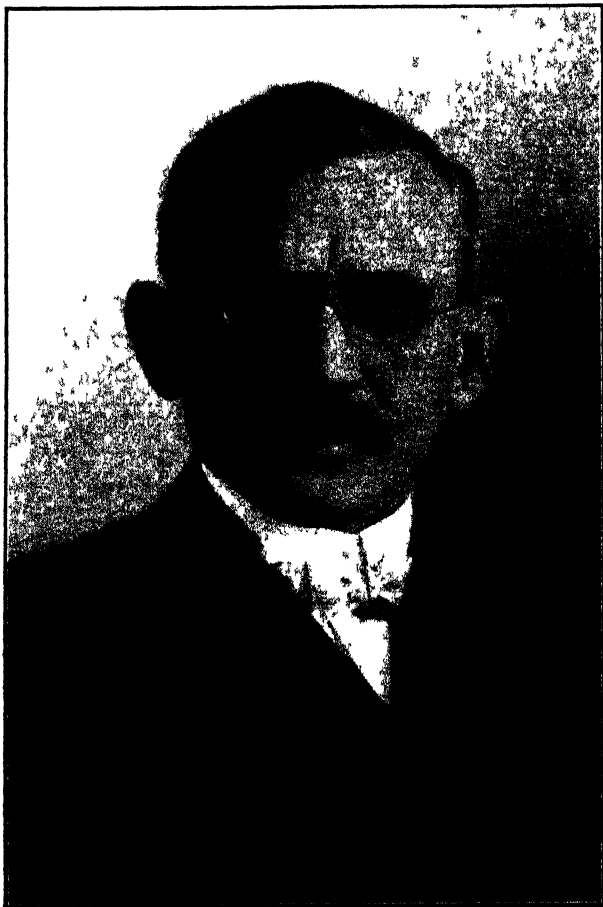
Virtually all the cases of throat trouble of public men, whether they be singers or speakers, may be named in three classes: 1. Catarrhal; 2. A weakened and relaxed condition owing to stomach troubles; or, 3. Strain from overwork.

From the experiences of thousands of catarrhal cases that have been cured by following the fast and other Physcultopathic methods, it can well be seen that even the most obstinate catarrhs readily yield to an intelligent fasting regimen accompanied by a body building process adapted to the strength of the individual. The same may be said of all troubles having their origin in the stomach, and it is equally certain that if the sufferer from throat strain will fast, exercise, get into the fresh air and sunshine, bathe his throat daily in hot or cold water, inside and out, and stimulate the special muscles of

the neck and throat by exercise, fomentations and finger manipulations, he will find the results will be exactly the same as in the cases of those whose troubles originated in the two other directions. Where throat or catarrhal difficulties are accompanied by incipient signs of consumption or unusual emaciation then the fasts must be used with great care and must usually be confined to a series of short fasts with hearty eating between of very nourishing food like milk, eggs, dates, honey, and, in some cases, a meat diet, as noted, where results cannot be secured on other foods.

I have had several cases of throat strain, some of whom have come directly to me for advice, while others have received their advice indirectly, and in no case has there been any long continued difficulty, when the fasting and other natural methods have been conscientiously followed.

THE FAST IN SCROFULA AND SYPHILIS.—It is well known that scrofulous and syphilitic taints of the blood are almost impossible to eliminate by any ordinary medical methods. My experience has clear-



Captain A. K. Berners, of the United States Army (retired). Gives fasting and physical culture methods the credit of saving his life and his eyesight.

ly demonstrated that the fast, aided by other Physcultopathic methods, can eliminate these diseases as certainly and as surely as any others. But, naturally, the process is slow, and liable to be attended with disagreeable symptoms. The deeper the disease is rooted in the system the harder it is to eradicate. Those who suffer from this class of disease may rest assured that if fasting and other natural methods will not cure them, nothing on earth can.

I have treated many cases, and I can truthfully assert that I have seen what appeared to be almost miraculous results in literally hundreds of cases, the active symptoms of the disease often disappearing even in a few days, apparently never to return.

THE FAST FOR NEURASTHENIA, RETINO-CYCLITIS AND ACUTE CHOROIDITIS.—The following is a portion of the story told by Captain Adolph Kreis Berners, of the United States Army, now retired, and shows the marvelous benefit of the fast in diseases of the eyes, which twice had threatened him with retirement on account of disablement. After giving details of the first attack of nervous trouble which he suffered, which seriously threatened his sight, Captain Berners goes on to say.

"The fall of 1907 again found me at my usual duties in the military service, apparently well and strong, but still continuing the use of the medicines prescribed by my various physicians. A few months, however, of rather arduous work brought on another attack of neuralgia, more severe than any of the former ones. Once more I was shut up in a dark room, for fifteen days this time, suffering intense pain. This time I was again at a remote station, and again the local surgeon sent me to the headquarters hospital as soon as my condition permitted my removal.

"*'Sub-acute glaucoma, both eyes,'* read the diagnosis this time, and as such it was confirmed by the oculist who took my case in charge upon my arrival. After learning my history this specialist *told me frankly that the glaucoma had been brought on by the excessive use of atropine.*

"Operation was decided on, soon after, to relieve the intense inter-ocular pressure in the right eye. In November, 1907, a posterior sclerotomy was performed and brought some relief; this was followed by a second operation of this kind, soon thereafter, and again there was temporary relief.

"I must mention that meanwhile my nervous system began to get seriously affected and also symptoms of bowel trouble appeared. The nerve specialist found neurasthenia and neuritis and prescribed more medicine. Another doctor—every disease being treated by a separate specialist—prescribed for the intestinal trouble and more drugs had to be swallowed.

"Again my hopes arose, for I seemed once more to be improving; soon I expected to leave the hospital. But again I was doomed to disappointment. Soon I was to learn that the misery and suffering I had thus far endured was insignificant when compared with what was yet to come.

"About Christmas of that year I was struck down with that terror of the tropics, amoebic dysentery, a disease which, according to medical lore, is caused by a germ, the *amoebae dysenteria*.

"I had been over two months in this hospital, where the utmost precautions were enforced to guard against infection by these germs, and yet there I was infected by the amoebae; while I remained entirely immune to their attacks for nearly seven years, when having robust health, I frequently disregarded the usual precautionary measures.

"For two more months I lingered in that hospital, reduced to a mere shadow of my former self. When strong enough to travel I went to a health resort in the mountains. There I underwent a repetition of many of my former experiences. At first, probably stimulated by the bracing climate, I got better, but soon relapsed and nearly died. The physician in charge of the place managed to get me off his hands and back to the headquarters hospital.

"My eyes were again in a very bad condition and to relieve the great tension in the right one an iridectomy was performed, i. e., a section of the iris was removed, which, in glaucoma, is considered an almost certain remedy.

"From a surgical standpoint this operation was a complete success, yet when the bandage was removed I found that the sight of that eye was about gone, and to this day I have not recovered it.

"But now that eye, though of no practical use, was never again to cause me trouble. The dysentery, too, got better gradually, and in about six weeks I regained enough strength to be sent to a nearby station for light duty. Once more my hopes arose and once more they were cast down promptly. I continued to improve but a short while, then all my usual ailments assailed me in an intensified form. This time it was decided to send me home, to remain there. I suppose my case had become very much a nuisance and according to all precedents I should have died long since. But I had an object in living, which I shall make plain later, and therefore determined to live and get well.

"My condition at that time was not very hopeful. The doctors gave me little encouragement; at the very best I would be an invalid for years. With this prospect in view, I again turned toward the homeland when the day of the sailing of the transport came.

"With the long list of troubles and suffering already related I turn reluctantly to the most severe trial of my sad experience, but I shall omit most of the harassing details of my tribulations on this homeward voyage, lasting over a month. I mention only that, as an emergency relief, the transport surgeon performed another sclerotomy on the eye which was 'never to cause me any more trouble,' and that the operation was followed by an infection. I nearly went insane with pain. Twice I stood at the ship's railing, contemplating suicide. The thought, however, that I must live because of another being kept me from jumping overboard.

"This, too, I survived. With shattered nerves and dejected spirit I arrived at the home port. I had begged the ship surgeon to have the afflicted eye removed on my arrival at the government hospital, and he had promised to recommend this course. A turn for the better, however, soon after my arrival decided the surgeons to let the eye remain.

"Once again I recovered sufficiently to be up and about. My friends advised me to try a famous sanitarium as a last resort. As soon as I could obtain leave I started for that institution, arriving there about the end of September, 1908. For six weeks I remained there, improving at first, but soon getting worse. When their lauded hygienic and dietetic remedies failed these 'doctors' resorted to drugs, for which I had gone there to escape. At the end of my stay of six weeks, during which time I had been several times severely prostrated, I was scarcely able to walk the length of a block. Thus my last straw seemed to have slipped from my grasp.

"To the Reverend D. W. Wise, at one time a fellow sufferer at the sanitarium, I owe it that at last I decided to try a course of treatment under Bernarr Macfadden's direction. I had given but little thought to physical culture when this gentleman, whom I learned to regard as an instrument of Providence, persuaded me to put my case into the hands of Mr. Macfadden.

"The story of my cure is similar to that of thousands of other sufferers who have been given back health and strength by means of the simple and effective methods of our great preceptor. My case is remarkable only in that it, more than most others, teaches the value of perseverance. While my assortment of ills was somewhat unusual and mostly new to the doctors at the Sanatorium, yet were they ever confident of success. When discouraged and wavering, the calm assurance of these gentlemen never failed to restore my trust. I knew that at last I would get well.

"When after a few months' treatment I left Mr. Macfadden's care, I was well equipped to continue the fight for complete health, and to-day, after a little more than a year of physical culture practice, I can say calmly and truthfully I have won. Health and strength are mine and the future has no fears for me."

Fasting was one of the chief factors in Captain Berner's cure. All other Physcultopathic aids were resorted to, but as my readers now fully understand there is neither mystery nor great complexity in these.

THE FAST FOR PTOMAIN POISONING.—At one of our "experience meetings" a patient got up and spoke as follows. One of our stenographers reported his words, which he afterwards confirmed in a written and signed statement:

"I have been greatly benefited by my stay here during the last two months. My improvement has been so wonderful I feel as though I ought to shout it from the house-tops. I am a druggist in the retail drug business, and have taken a great deal of medicine throughout my life. However, I have lost faith in the drugging method and intend to give up that kind of business. I came here last winter and stayed six weeks, and felt greatly improved, but on my return I had what they call a 'crisis' here and a return of my trouble. I was at my place of business and my associates insisted upon

calling in a doctor. I had been fasting for several days, and yet the doctor pronounced my trouble 'ptomaine poisoning,' and said that I must have immediate attention. As soon as the doctor was out of sight I left my store and made arrangements to return. My long years of experience in the drug business had brought me to the conclusion that there is no such thing as science in medicine. I look upon Mr. Macfadden as the world's greatest benefactor at this moment.

"When I first began treatment it was almost impossible for me to walk up the stairs, even though supported by a cane. I have been under treatment here for three months, and one day last week I walked twenty-two miles, and the following day I ran a distance of six blocks, something I have not been able to do for ten years. I am gaining in health very rapidly and am growing stronger daily. I have various reasons for being enthusiastic. I have even grown a little hair on my head that I did not bring with me. I have learned to walk since I came here, and am going home and continue my pursuit for perfect health."

THE FAST FOR HYDROPHOBIA.—The question has been asked me several times whether I thought fasting would be of any benefit in a case of hydrophobia. Personally I have treated no such case, but I have a friend who had an experience which he describes to me as follows: "I was at the home of a dear friend who had been bitten by a rabies-infected dog a short time before. He was a teacher, of highly nervous temperament, and had been somewhat afflicted with neurasthenia before the dread came upon him that he might suffer from hydrophobia. He had asked me to watch him and I had accordingly prepared myself, and formulated a plan of treatment which I intended to follow should symptoms of the dreadful disease appear. Accordingly when one of his pupils rushed into the house, stating that he had gone mad, it was not a minute before four of us were ready to seize him and begin the treatment I had outlined. He was at once blind-

folded and put into a cold wet pack, and after his body was surrounded with hot bricks, hot water bags and covered with blankets, a feather bed was thrown over the whole and he was so effectively hemmed in that it was impossible for him to escape. He was kept in this pack for several hours, during which time he was compelled to swallow large quantities of hot lemonade sweetened with honey. In the course of about three hours his paroxysms and ravings ceased and gave way to a tremendous lassitude. He was then taken from the pack, which emitted a frightful stench; was placed in a hot bath, given a hot enema of about three quarts of water, and put to bed. He fasted for five days, and then was allowed to drink a little fruit juice for several days. He then resumed his normal habits of diet, and though his recovery was slow it was complete, though for three or four years he did not gain what one might term robust health. I am satisfied, however, that if the fast had been longer continued, all the poisons would have been eliminated from his system and he would have recuperated with far greater rapidity."

FASTING FOR CONGESTION OF THE LIVER.—I have had a great number of cases of congestion of the liver where the fast has been followed to great advantage, a complete cure being the result in almost every case. These could be given in detail, but I am always glad to tell of an outside case from reliable sources. The Los Angeles *Times* has a department, "The Care of the Body," devoted to hygienic suggestions, edited by Harry Ellington Brook. In 1903 Mr. Brook published the following account of a fast undertaken by Mr. John A. McFee, for the relief of liver congestion.

The *Times* account reads as follows, quoting Mr. McFee's own words: "I needed my strength for certain business deals I had on and I was willing to do anything to keep it. The pain in my side kept getting worse and worse, and I could get no relief from doctors or medicine. It was six weeks ago that I read in some magazine what fasting would do for such a complaint. The account contained the experiences of people who had gone through it, and it all sounded reasonable.

When I was mining in the mountains I frequently went without food for days at a time, and knew that I could stand it well enough.

"I found that instead of being something to be dreaded, it was instead a great relief. Many times before I had skipped a meal without much inconvenience, which is quite a contrast to what I did in my youth when the loss of a single meal was a calamity. During the fast, though, I had no inconvenience whatever. Even the first day, which is usually a hard one, was for me without dread. Each afternoon I went out to the Sixth Street Park—Central isn't it?—and the rest of the time was spent here in my rooms.

"At the end of fifteen days the pain in my liver seemed about gone, and I half intended to quit then. But I thought if it was possible I would continue to the end, until the pain should be all gone, that it would be a great thing for my health—and I was willing to do anything for that. After that, my friends got wind of what I was doing and used to bother me a great deal with their curiosity, though I didn't do it for notoriety. Finally, they declared that I was trying to commit suicide. So, on the twenty-eighth day I concluded to quit, though I felt as though I could continue on indefinitely."

He broke his fast with some watermelon. Six hours later he took a cup of beef broth, and then for twelve hours, at intervals of two hours, he took more beef broth. Waiting again for four hours he put an egg in the broth, eating it with some crackers. A few hours later he had some fruit—a pear and two bananas. Finally he went to a restaurant, ordered a porterhouse steak and ate nearly all of a good sized order. This was merely a "respectable" meal, such as an ordinarily hungry man would have. Throughout the twenty-eight days he had no morsel of food, though he drank plentifully of purified water.

McFee was fifty years old then. When he began his test he weighed 162 pounds, and when he finished, 134 pounds, mak-

ing the loss twenty-eight pounds for the whole period, or one pound a day.

THE FAST FOR THIN PEOPLE.—It is no uncommon experience to find thin people who are overeating to a large degree with the idea that thereby they will gain in weight. Never was there a greater mistake. Let me again make the important affirmation that one should never forget, namely: It is not the amount of food one eats that builds up the body, but that which is assimilated. Every particle of undigested food, every mouthful that is forced down, is simply putting a load into the stomach that should not be carried and the energy gained from the small amount of food that is digested is practically lost in getting rid of the amount that is undigested, with the danger of poisoning the body by this undigested mass of matter in addition. It is a literal fact that many very hearty eaters are being starved to death because of their inability to digest the food they eat. The quality of the food, too, has much to do with this condition. Those who eat largely of white flour products, for instance. We have been brought up to the belief that "Bread is the staff of life," regardless of what kind of bread it is. When that statement was coined, white flour was absolutely undreamed of. Some few people might be found who could endeavor to get rid of the coarsest of the bran, but as a rule bread was made of the whole of the wheat. The result was that all the nourishing elements were contained in the bread, and it was indeed and truly the staff of life. But now when we eat white bread, biscuits, cake, and other materials from the fine white flour that a perverted teaching has led us to believe is so much to be desired, we are putting the least valuable part of the grain into our stomachs to our incalculable injury. Such food is a delusion and a snare, a sham and a pretense. One might eat to repletion from morning to night of this kind of food, and even if we were able to digest it, we could not extract enough nutriment from it to keep the body going. The white flour delusion is one of the monster frauds that has been perpetrated upon a willing people. When the life germ of

the wheat and the nitrogenous elements contained in the coarser parts of the grain are taken out and fed to cows, horses and pigs, they get the nutritive substances, the real food, while we eat the "pretty looking" but valueless residue. One might almost as well expect to live healthfully upon ground chalk as upon white flour. Its nutritive qualities are most unsatisfactory.

The fast often has a remarkable effect upon thin people who have been overeating.

I remember talking with a man who had fasted fifty days. Before he began this fast he was poorly nourished, with peaked features, and in about two months after the fast he began to gain; he was jolly and about twenty years younger in appearance than when he began the fast. I had quite a conversation with him and he said it was like "being born again." He said, "I lost about 35 or 40 pounds, and then I gained about 45 or 50 pounds of new tissue, and I feel as though I had been born into the world anew."

While, generally speaking, it is obvious that the more flesh one carries the longer he or she will be able to fast without losing too much vitality, nevertheless, it is frequently the case that a short fast of one or two weeks will be of very marked benefit to one who is already much reduced in flesh. This, for the reason that a lack of flesh is often due to a weakened digestive system, poor assimilative power generally, and perhaps a stomach that has been over-burdened by excessive food. The result of the fast is to strengthen the digestive powers by giving the organs a rest and the opportunity to recuperate. It is usually the case that after one builds up tissue at the conclusion of a fast he weighs more than he did before.

This experience is common in cases of this character. People who have eaten so much that they have been kept thin by trying to rid the body of the surplus soon begin to make a satisfactory gain in weight after one or more fasting experiences. The same effect is produced upon others by lessening the quantity of food they are eating, masticating it

more thoroughly, eating but twice a day, and choosing such foods as best add to the fatty and muscular tissues.

THE FAST FOR OBESITY.—In 1902 the newspapers gave considerable space to an attack on fasting, based upon the following facts: Sometime before, a woman in Boston, who was excessively fat, began a fast for the purpose of decreasing her weight. The fast lasted three weeks. At its conclusion she had been greatly reduced, and felt vastly improved. She was enthusiastic in her praise of fasting as a means of reducing weight. She felt herself so much better in every way, her appetite was so good and her digestion so perfect, that she forgot the lesson the fast would have taught a really intelligent person, and began to eat three hearty meals a day, at the same time ceasing her habit of working every day in her garden. As the fast had increased her functional powers she was able to digest these three meals as she never had done before, and the natural result was that her weight soon increased to forty or fifty pounds beyond what she had weighed before she began her fast. Then, as another natural consequence (that any intelligent person might have foreseen), ailments of various kinds began to appear, so that her last condition was immeasurably worse than her first. She now began to revile the fast as the cause of her present condition, and the intelligent (!) press of the country took up the matter and heralded it broadcast, as a solemn warning against this dangerous custom (!). At the same time they gave all of the facts about as I have here presented them. Is it not perfectly apparent, therefore, to an unprejudiced mind, that this woman was indeed improved by the fast, but that at its close she lived the life of the glutton, and stopped taking exercise, and thus brought upon herself the natural consequences of the lazy glutton's life? Fat is stored, or accumulates, in the body only when excessive food is eaten. It is nothing but stored-up nourishment. If people who are disposed to lay on fat will indulge their appetites they must pay the penalty. If they prefer yielding to the demands of appetite, with the consequent results, to the rational enjoy-

ments of the normal healthy life, it is in their own hands. But the intelligent person who finds himself or herself too fat, will stop eating so that the body can feed upon the surplus fat until the extra weight has been reduced satisfactorily. Let me give a word of caution to those who have the disposition to take on surplus weight: If you are determined to live rationally and healthfully, a fast will be of great benefit to you, for it will reduce your excessive weight and put you in a condition to enjoy life to the fullest extent. But, if you are ruled by your appetite, it is a waste of time to fast, for a fast will so increase your functional and assimilative vigor that if you continue to eat to excess, or to eat what is considered an ordinary quantity of food, you will increase your weight more than ever. The ability to "get fat" is a sign of health, and one highly to be desired. But, if it is accompanied by a weak will that allows itself to be dominated by appetite, an excess of weight is bound to follow, with all the consequent ills of an overfed body.

THE FAST FOR INFLAMMATORY RHEUMATISM.—In cases of *inflammatory rheumatism* a fast has been found to produce remarkable results. Long before I had realized the vast importance of the fast in many forms of disease, I came to the conclusion that it was of great benefit for this complaint, and, remarkable to say, it was the observation of the ordinary drugging system of treatment that led me to this conclusion. The ordinary physician keeps his patient in a state of constant pain, feeding him as generously as possible, with the result that he steadily lessens his powers of resistance. The stomach, over-taxed by an excess of food, and irritated and poisoned by the drugs forced upon it, soon ceases to work, and fasting becomes unavoidable. Neither physician nor patient sees the naturalness of this condition of affairs, and both deplore it. But, all the same, Nature, given the least opportunity, works in her beneficent way. The patient, unable to take food, actually begins to improve, because the disease is being naturally and rapidly eliminated, and if only the disgust for food continues long enough, the fever disappears. Of course, if,

on the other hand, appetite soon returns, recovery is slow, because retarded by the presence of undigested foods. Having learned this, I came to the conclusion that the sensible treatment was to cut out all food. Giving the patient an abundance of hot or cold water to drink, swathing the joints in hot cloths, and giving a hot enema two or three times a week, will further the process and naturally produce a rapid recovery. I have treated a number of patients in this way, and the results invariably have been as here outlined.

THE FAST FOR NEURASTHENIA.—Neurasthenia is a disease that rapidly yields to the fasting method of treatment, although at first thought it might appear to be one that would be least amenable to this method. In this type of cases, however, we seldom prescribe long fasts, preferring several short fasts of six or seven days' duration, with intervals of a week between, during which the patient is exceedingly careful to eat only the most nutritious food, and in the smallest possible quantities to stop the waste of tissue. The results are little less than miraculous. The exhausted nervous system seems to gain new life and power as the elimination progresses.

A FAST FOR DROPSY.—In 1903 Mr. Arthur Van Meter, a member of the firm of Van Meter, Harness & Co., of Salt Lake City, undertook a fast which lasted 40 days, for the cure of dropsy. A short time before, he had visited specialists in California who had twice tapped his right lung for the extraction of an unusual quantity of fluid, after they had vainly tried to carry it off by absorption. On his return to Salt Lake a general dropsy set in all over him, his lower limbs became swollen to an enormous size, and his abdomen was greatly charged and similarly swollen. After numerous examinations, the doctors concluded that he had enlargement of the liver, and he was treated for this with the best medicines known. Still the dropsical condition failed to improve, and after he had been tapped in the abdomen the doctors said he would die in a little while. At this critical period, a cousin of Mr. Van Meter, who is a devout believer in fasting, wired

him to "FAST," and save his life in this way. So skeptical was Mr. Van Meter, that he immediately ordered a turkey dinner and proceeded to eat heartily of it. But the idea introduced to his mind was not to be easily dismissed, and before the week had ended, he had begun fasting, aided by books on fasting and letters received from his cousin, who had been cured in this manner. Within two days the dropsy began to disappear, and at the end of twelve days he was relieved entirely, and for the first time in six months slept quietly the whole night through.

During all the time previous to the fast he could not lie down. He could only sit in certain positions, while to a good sleep he was an entire stranger. He continued his fast twenty-eight days longer. His pulse, which had steadily kept at the hundred mark, came down to normal, and the doctors pronounced his liver normal also. Nothing but water passed his lips during the fast. A terrible cough also distressed him before his fast, and he and his friends feared that he was going into consumption. The cough was entirely relieved during the fast, and at its close he breathed to the lowest cells of his lungs with ease and freedom.

Mr. Upton Sinclair tells of an interesting case of cure of dropsy and asthma:

"While I was at Mr. Macfadden's, I met a gentleman who told me in detail the experience of his brother, a man in middle years, who had lived a dissipated life, and who was suffering from a complication of terrible diseases: asthma, which had made it impossible for him to lie down for several years, and dropsy, which had advanced to such a stage that his legs were like huge sacks leaking water. This man had been dosed with drugs by his physicians until finally he had come to the point where his kidneys refused to act, and the physicians confessed that no drug of which they knew would avail. Portions of his body had become black, and he was told that he could not live through the night. Members of his family were summoned, among them his brother, who told me the story. He persuaded the sufferer not to eat the sup-

per which was brought to him, and as a result the man lived through the night. He fasted for a week, and after that went for a week or two longer on a very light diet, carefully regulated, and he is now pitching hay on a farm down in Kentucky."

THE FAST FOR CATARRH OF THE BOWELS.—Catarrh of the bowels is one of the most dreadful of diseases, and yet it yields readily to a fast. In cases of this nature, unless the vitality is too greatly depleted, I invariably prescribe a prolonged fast, or a "fast to a finish." (See earlier section.) A daily enema should be taken, consisting of water as hot as the patient can bear it, in order to aid the bowels to rid themselves of the accumulated and sticky mucus.

FASTING FOR YELLOW FEVER.—Yellow fever has long been considered one of the awful scourges that civilized man, in a tropical country, has been subjected to. The sufferers from the disease are so tortured and agonized by it that medical science has done all it possibly can from its standpoint to discover some means of ameliorating its ravages. Naturally many attempts have been made to find the germ which the scientists suppose to be responsible for the disease. It was not until a few years ago that they came to the conclusion that the disease was caused solely by the bite of a certain species of mosquito. They claimed, however, that when once the disease is communicated, it is contagious.

It is a self-evident proposition that not all persons who are bitten by the malignant species of mosquitoes suffer from yellow fever. For if they did, many hundreds of thousands would annually be afflicted. This confirms the assertion I have often made, and experience demonstrates, that disease germs have no effect upon a healthy body. There must be a receptive condition and a state of body that encourages the growth of these disease germs ere they can live and thrive sufficiently to cause disease. In a healthy body they immediately die and are expelled. Therefore, I am certain that no healthy person can contract yellow fever even though inoculated with a thousand germs at a time. If, however, one is a

little below par, and is subjected to the disease, and "catches" it, if he be treated in a rational fashion the disease will progress no further than the first stage and can quickly be eliminated.

Unfortunately, it is too true that the majority of people do not live in such a way as to keep their bodies in a state of normal health. The result is that when a number of mosquitoes are bred by improper sanitation, many people in the community may be made to suffer by being inoculated with the germs of the disease. To the improper modes of life, therefore, that breed the unhealthy physical conditions that enable the disease germs to live and breed, yellow fever undoubtedly owes its origin.

In the treatment of the disease, the ordinary remedies have been tried in vain from time immemorial. Drugs are not only useless, but positively injurious, and for many years have been abandoned by the most conservative adherents of the old schools of medicine. All they have attempted to do has been, according to their light, to assist Nature throw out the poisons.

Physcultopathic methods in the treatment of this disease are as perfectly simple as in those of any other. The first thing to do is to flush the colon with hot water. This treatment alone, if used regularly, would almost effect a cure. The flushing should be done at least three times a day until recovery. If the fever is very high, the hot enema should be followed by an injection of a pint, or even a quart, of cold water, which should be retained for several minutes. This will materially reduce the fever. One of the earlier symptoms of the disease, however, is the recurrence of severe chills. While these chills are in evidence, the cold enema should not follow the hot one. The feet of the patient should be placed in hot water and he be required to drink as much as possible of hot water, into which a few drops of lemon juice has been squeezed. Then when the fever stage arrives, the cold injection should follow the hot one. An abundance of water, hot or cool (not ice cold) should be drunk. The more the patient can be induced to drink, the more freely he will perspire,

and perspiration is highly conducive to a cure. Naturally the patient should be required absolutely to fast. Food, in such an acute condition of fever, is worse than drugs. For it passes into the stomach undigested, where it ferments and generates poisons which circulate in the blood and add to the virulence of the disease.

While the patient is too weak to take the hot bath frequent sponge baths to remove the effects of perspiration should be given, and the windows should be kept open to insure the most perfect ventilation.

FASTING FOR CANKER IN THE MOUTH.—Canker in the mouth yields very readily to fasting. This is an invariable indication of impure blood. Very few people who live in accordance with the ordinary dietetic habits of our civilization escape canker. It will generally manifest itself after some unusual imprudence in diet, but with an ordinarily healthy person will disappear in a few days. Where there is a generally depleted condition of vitality and the blood is impure, canker becomes so frequent as to be almost always present and to cause considerable annoyance, distress and pain. Fasting purifies the blood and generally cleanses the system of the poisons that create canker. Hence, on the first sign of the trouble, one should immediately fast, and where it is a long continued trouble, the fasting should be proportionately lengthened.

THE FAST FOR HEMORRHOIDS OR PILES.—While hemorrhoids or piles are not supposed to be an indication of serious disease, the supposition is not justified by the facts. These are that piles really show a very weak and disorganized condition of the alimentary canal and the presence of disease that if not eliminated will cause much serious trouble and possibly invite death earlier than would otherwise be the case.

The Civil Service Commission regard piles as serious enough to reject from many positions any persons suffering from them. The ordinary treatment for piles is to encircle them and then clip them off. But this in no way interferes with the original source of the disease. The result is that

it is liable to recur at any time. Hundreds of thousands of people who refuse to submit to the surgical operation are constantly irritated and distressed by itching, bleeding, a sense of fullness around the anus, and other distressing symptoms, and they spend millions of dollars annually in quack nostrums for the palliation of their troubles. Yet there are very few cases where a ten or fifteen day fast will not completely eradicate the disease that causes the trouble, and there will be no danger of a return, provided, of course, the patient lives a natural and rational life thereafter.

In hundreds of cases we have treated for chronic dyspepsia and other digestive ailments, piles have been an accompanying symptom. They have invariably disappeared with the abdominal disease as the result of a wisely administered fast.

BREAKING THE FAST.—The breaking of a fast is a matter that requires the most careful consideration. It cannot be denied that carelessness at this time may not only undo all the good work accomplished in the fast, but may do serious injury. In the thousands of cases that have passed through my hands I have found that not the slightest danger need be apprehended if a few simple rules are observed. I have heard of cases where people have died as a result of eating too much when breaking a fast. How absurd to throw away all the good results of a week or a month of self-denial just to gratify the appetite you have so long held in check. As a rule at the close of a fast the sense of taste is so keen and the desire for food so insistent that one feels as though he could eat everything in sight. It is not so much that he has accumulated a ravenous appetite during the fast, as that the thought of eating again tempts him to excess. It is partly a mental condition. A well known authority on fasting well states the proposition as follows:

“In breaking the fast, and this applies especially to a fast completed in all senses and with natural hunger in evidence, great care must be used. How much, how often, and what to eat at this time and throughout the rebuilding process,

are matters of vital import. When eating is resumed, excessive desire for food develops; and, if this be indulged and not restrained, the benefits of the cleansing that the patient has undergone are apt to be neutralized, if not absolutely destroyed. Just here is where the care and direction of one conversant in all respects with the method of treatment are almost necessary to successful issue. Even after the normal amount of food supply is reached, it is incumbent upon the patient to continue the diet prescribed, and to follow certain daily exercises that tend to rebuild the wasted muscular tissue. When the fast is ended and the cleansing of the body is complete, heart, arteries, and veins perform their work in an absolutely perfect manner."

Naturally, the importance of care in this respect increases with the length of the fast. A fast of one or two days would require no special attention in the matter of breaking it, but when one has fasted three or four weeks, or perhaps a couple of months, as in extreme cases, then the matter of readjusting the organs to the daily digestion of food becomes an exceedingly delicate task, and the greatest possible care is essential in order to establish a normal activity of these organs and realize the full benefit of the fast. One cannot start right in to "eat a meal." Nothing radical or sudden in the way of eating can be permitted.

If a patient is fasting under the guidance and supervision of a physician or health director, great pains should be taken to impress upon his mind the imperative necessity of doing nothing without the knowledge of his adviser, for serious consequences may follow. In the case of extreme weakness or faintness during a long fast, it occasionally happens that the will is weakened, and the patient may be led to surreptitious attempts to gratify his hunger, or rather what he may think to be a condition of hunger because of his weakness. In such an event he is almost sure to eat too much and also to eat something that is altogether unsuited to the condition of his body. He will not only increase the difficulties of his adviser but he will bring distress and perhaps very serious

consequences upon himself. In such a case the digestive organs should be emptied as soon as possible, even resorting to emetics and enemas if it seems necessary, and the fast may need to be prolonged a little beyond the intended limit in order to overcome the unfortunate results of such indiscretion. The patient should also drink freely of water, especially of warm or hot water, under such conditions.

The patient should be given to understand, therefore, that he must observe the strictest honesty and confidence so far as his adviser is concerned, so that if he feels an uncontrollable desire for food he will speak of it and avoid any mistakes. If it is a manifestation of real hunger, and it should be found advisable to break the fast without further delay, then it may be done intelligently and with suitable foods. It often happens that it becomes inadvisable to continue a fast as long as at first intended. Different individuals are capable of very different limits in the way of prolonged fasting, and those who are underweight when beginning should be carefully watched. Sometimes conditions seem to indicate a fast of two or three weeks, but marked weakness and apparent loss of vitality at the end of one week may demonstrate the importance of breaking the fast without further delay. In such cases it may prove to be a good plan to arrange for a series of fasts, increasing in length as the individual gains in strength. Suppose one has to do with a case of radical and chronic blood poisoning, which requires the most absolute purification of the body. Short fasts will not be sufficient. The devitalized and already emaciated patient is in the beginning unable to undertake a long fast, but by adopting such a series, the body will learn to prepare for succeeding fasting periods by building up reserve tissue and gaining weight, so that in time the long fast will become a possibility. But the benefit of each fast and the perfect recuperation from it will depend largely upon successful methods of breaking it. It is like sad news; one should "break it gently."

I generally have found it beneficial to break the fast the first day with nothing but pure fruit-juices. Grape-juice,

apple-juice or orangeade are all good for this purpose. One glass full, not too strong and without any added sugar, should be taken three or four times during the day, sipping it slowly and enjoying its flavor to the full. Then, if one has no reason to delay getting back to normal habits of diet, the second day I would suggest one or two glasses of very warm milk three or four times during the day, likewise sipped slowly and retained in the mouth as long as agreeable. It is best to retain it in the mouth as long as it can be tasted, or until it is swallowed involuntarily. On the third day the quantity of milk can be increased and some acid fruit taken. On the fourth day the amount of acid fruit and milk can be increased. On the fifth day one can begin his regular diet, though he should very greatly restrict the amount he has been in the habit of eating.

The above instructions refer to a fast that has been continued for six days or more. It is not only the fact that the digestive juices are not secreted during the fast, but also partly the actual changes in the size of the stomach that take place, that make it necessary to use care in breaking a fast. After a fast of from two to four days one may resume his old diet and, as a rule, eat an ordinary meal without any special feeling of discomfort therefrom. I have known fasters to continue for six or seven days and follow out a procedure of this kind, apparently without any evil results. It is far better, however, to be on the safe side, and either break the fast with fruit-juices or acid fruit of some kind that is especially palatable.

In my institution we use fruit-juices followed by the exclusive milk diet in nearly all cases for breaking a fast. This method is especially recommended when the fast is continued for six days or more. Following one or two days on fruit-juices, which are used to break the fast, this diet is confined to one glass of milk each hour and a half to two hours on the first day. On the second day one glass of milk every hour. On the third day one glass of milk every three-quarters of an hour. On the fourth day a glass of milk every half hour, and each day thereafter the milk to be gradually increased

up to six or seven quarts daily. This treatment induces a very rapid increase in weight. Sometimes one will gain from one to three pounds daily for a considerable period. I have seen patients gain as much as twenty-five pounds in a week.

When one, however, does not care to stay on the milk diet, it is a good plan to continue this diet until the "edge" is worn off the appetite, or until he loses the extraordinary desire for food that often follows a fast.

While by far the largest majority of fasters will be able to use fruit juice successfully to break the fast, there will be a number who have an antipathy, physical or mental, to this. In these cases it will be necessary to substitute some extremely light nourishment that will prepare them for the milk or other diet to follow.

Strained tomato juice, preferably quite hot, is relished and taken with success by a considerable number. A pinch of salt may be used in each half cupful (which is sufficient for each "feeding"), though it is better to omit this if possible. Some other cases can take a mixed strained vegetable soup, without meat stock. This may be made from any one to three or four vegetables. Still others, especially those who have fasted for stomach and intestinal inflammations, find thin cereal broths and gruels more satisfactory. Oatmeal, whole rice or barley, or any other cereal preferred, may be thoroughly cooked in considerable water and then strained, and this broth used as the tomato juice. Three or four feedings of any of these will be sufficient for the first day or two; then three-quarters of a cup may be used as frequently, or half a cupful may be taken five or six times a day.

Depending upon the length of the fast, these substitutes for the fruit juice may be taken for from one to four or five days. In our wide experience we have found that few other diets are satisfactory for breaking a fast.

When it is impossible to break the fast in this manner, one should simply limit the quantity of food which he is accustomed to eating. At such times he should be sure to confine his food to those articles which he knows to be wholesome, and avoid combinations. By eating simple foods he will find

that they will taste delicious and need no condiments or complicated cookery to make them appetizing.

Upton Sinclair's experiences are valuable as they show the results of individual experimentation after he had received all the instruction that we were personally able to give him.

"Since leaving the Macfadden Healthatorium, I have at various times had occasion to fast, and have tried other articles of food upon which to break the fast. While I was down in Alabama, I took a twelve day fast, and at the end I was tempted by a delicious large Japanese persimmon, which had been eyeing me from the pantry shelf during the whole twelve days. I ate that persimmon—and I mention that it was thoroughly ripe; in spite of which fact it doubled me up with the most alarming cramp—and in consequence I do not recommend persimmons for fasters. I know a friend who had a similar experience from the juice of one orange; but he was a man with whom acid fruit has always disagreed. I know another man who broke his fast on Hamburg steak; and this also is not to be recommended. I have another friend who fasted a week and broke the fast with rice and soft boiled eggs, and this friend also got no benefit to speak of from the experience, although the foods agreed with her perfectly and she had no temptation to over-eat. This is about what I should have expected, as my own experience has led me to believe that the worst foods that people eat are these highly concentrated pasty things, which are deficient in natural salts and contain no waste to keep the intestines active. A person can eat food like eggs and rice for weeks and never have a movement of the bowels. I know it, because I have done it; and I can give myself as durable a headache by that means as other men can get with a hamper of champagne.

"It has been my experience that immediately after a fast the stomach is very weak and can easily be upset; also the peristaltic muscles are practically without power. It is, therefore, important to choose foods which are readily digested, and at the same time have bulk; also to continue to take the

enema daily until the muscles have been sufficiently built up to make a natural movement possible. The thing to do is to take orange juice or grape juice in small quantities for two or three days, and then go gradually upon the milk diet, beginning with half a glass of warm milk at a time. If the milk does not agree with you, you may begin carefully to add figs and dates and perhaps soaked prunes. You may take such foods as baked potatoes and rice and gruels and broths, if you must, but don't take them any longer than you have to, and don't forget the enema. I have broken a couple of three day fasts by means of boiled wheat, and I am inclined to believe that this is, next to the milk, the best thing I have yet found."

Dr. Tanner, a pioneer in fasting, years ago broke his first fast on watermelon, eating as much as he cared to. This might be satisfactory in many other cases, though it would not usually be well to eat of it as freely as did this old pioneer.

Another experimenter has reported that he found much satisfaction in breaking his fast with evaporated apricots soaked in water for twenty-four or thirty-six hours, since this appealed to him more than anything else. It is possible that other forms of dried fruit, similarly treated, might be available. If there seems to be any heavy fruit pulp, after prolonged mastication, it might be best to eject this rather than to swallow it, although after the first day or two this very waste would be valuable for keeping the intestines active.

Above all things, one should not be impetuous in his gratification of the appetite, no matter what he chooses to eat. Restraint should be his watchword, and this should be the case not only for the first few days immediately following the breaking of the fast, but for the next two or three weeks as well. After one has resumed his ordinary diet the sense of taste is still so keen and the appetite so conducive to the enjoyment of food that it is very easy to eat so heartily for a while as to offset the good results of the preceding fast and to bring about conditions which will make another fast necessary. One should carefully guard against this.

The chief and most important rule to be observed in breaking the fast is that *Nature will always indicate when the fast is to be broken*. This will be made plain by a series of symptoms which no expert in fasting cases can ever mistake, and which almost invariably appear together. These symptoms are as follows:

The *temperature*, which before had probably been sub-normal or above the normal, reverts to normalcy and stays there. The *tongue*, which before had been coated with a film of thick material, clears, or tends to. The *pulse*, which, throughout the fast, had been either above or below the normal, now beats at normal rate. The *breath*, which, all during the fast, had been offensive, becomes clean and sweet. The *skin* and other reactions are perfect, instead of faulty and defective. Last, but not least, *hunger* appears—I do not mean by this false appetite, but true hunger. These are a few of the principal symptoms which may be seen in one who has followed a strict fast for a number of days, and who has allowed it to terminate naturally.

Just here, I must warn the enthusiastic student, however, against becoming fanatical on this subject of fasting, and particularly against the idea that *all* these signs must invariably appear, before the fast is ready to be broken. I have known several men and women who positively refused to break their fasts because the tongue had not cleared, or because some other symptom had not appeared, supposed to manifest itself before the fast is ready to be broken! This is a great mistake. There are numerous cases on record in which the tongue refused to clear, and yet food was manifestly craved; others in which the pulse or the temperature did not go to normal, etc.; and yet the fast should have been broken at that time. These symptoms usually appear together, it is true, and form very important and interesting points of guidance for the observer; but they should not be followed implicitly; the fast should be gauged rather by the patient's *general* condition. This is always a surer sign than any single symptom—no matter how important that may be. Be cautious, therefore, in advising your patient to break a fast; but do not become fanatical in

your belief that such-and-such symptoms *must* appear before you allow it to be broken.

Another point to be observed, just here, is this. While a long fast is of extraordinary benefit in many cases, very much the same results may generally be obtained—in all but acute or very severe cases—by following other methods, somewhat less strenuous. For example, a series of short fasts, a fruit or milk diet, or the “grape cure,” accompanied by thorough hydrotherapeutic treatment, will nearly always effect a cure as effectually and almost as speedily. Certainly a long fast is much to be preferred in certain cases; and there are some instances in which nothing else would take its place. But I have known of many cases in which a long fast had been undertaken, when I personally should not have counselled it. One’s more radical views nearly always tend to become “toned down,” in maturer life, and my own experience has slowly but surely forced me to this conclusion. Others who have had much practical experience with fasting cases also agree with me in this. Even Hereward Carrington—who has written a powerful defense of long fasts—has, more recently, come to the conclusion that these fasts may easily be abused; and that shorter fasts, coupled with vigorous treatment in other directions, may accomplish the same results. While a long fast is to be recommended, in certain cases, therefore, it must not be pushed to the extreme limit in the majority of instances; and more cautious measures are often to be preferred—especially if the patient is in the hands of one who has not had an extended practical experience in this direction.

The question may be asked, naturally enough: How can we distinguish false appetite from true hunger? The man says he is hungry in both cases; but in one case you say he is not to be given food; and in the other, he is! How distinguish?

The surest mark of distinction is the following: Whereas false appetite displays itself by a morbid irritation and gnawing *in the stomach*, natural hunger is indicated by a general bodily condition—a universal call for nutriment—which is, however, especially noted *in the throat*—just as “thirst” is



**Hereward Carrington, well known authority on dietetics and fasting and collaborator
in the preparation of this work**

noticed in the throat. The watering of these glands; the call of throat-hunger, is the sure sign of the return of natural hunger; and a fast should never be broken, other things being equal, until this throat-hunger has been noticed. Of this, however, later.

Another fairly sure sign is that false appetite will call for something—anything—with which to stay the pangs that are felt; whereas true hunger will generally call for a specific thing—one particular article of diet. Still, I have known this sign fail very often, so that it cannot be taken as a sure sign. But when it *does* appear, it may usually be taken as indicative of the return of normal hunger.

The question may here be raised: Is it *safe* always to wait until natural hunger returns in this manner? Might not a patient run the risk of starving to death before this desirable point has been reached?

The answer to this question is very plain, indeed emphatic. It is always safe! Hunger will invariably return before the body is unduly wasted! It has been proved, experimentally, that *it is a physiological impossibility for the body to die of starvation before the skeleton condition has been reached*—and hunger will always appear before this point has been attained. The reason for this is as follows:

The muscles, organs and various tissues throughout the body waste in varying proportion, and at various differing rates. Thus, in a body that has starved to death, 97% of the fatty tissue has been lost, 30% of the muscle, 56% of the liver, 63% of the spleen, 17% of the blood, while the nerves and nervous system have not lost anything at all! It is evident, therefore, that the nervous system has the power of *self-feeding*, or nourishing itself at the expense of the rest of the body; and further, the body loses its various tissues according to their relative value to life. Thus, fatty tissue is the least valuable, and hence most of it is lost. The nerves are the most valuable, and so nothing of their substance is lost. This shows us that morbid matter which has accumulated within the system will doubtless *all* be eliminated during a fast—since it is of no use

at all. And experience shows us that this is the case. All useless material is eliminated from the body before any of the useful bodily tissue is destroyed. It is because of this fact that the fast does us good—"cures" us.

To return, however, to the subject of breaking the fast, it may be said that this should invariably be done *gradually*; and the longer the fast has been, the more care should be exercised at the period of breaking it. Many analogies will show us that this must necessarily be so. Suppose you have a machine which has been stopped for repairs. (A printing press, which prints our daily papers, is a good example of such a machine.) In starting such a press, it is invariably started *very slowly* at first, and the speed is gradually increased as impetus is gained. But if the machine were started full speed immediately, it would doubtless be smashed and many of the finer workings would be deranged. The probability is that it would so injure the machine that it would have to be stopped again, for longer and more serious repairs!

It is precisely the same with the human machine—the human body. If, after a long fast, it be started off at full speed; that is, if a full meal be eaten without any preliminary preparation, and at the end of a protracted fast, it will doubtless so damage the vital mechanism that grave and even dangerous results may happen. It must, therefore, be broken very gradually, and more and more food allowed as the days pass, and as the system strengthens.

If a fast be broken before it is naturally terminated, the result would be the same as if a foreign body were introduced into a machine which was trying to repair itself. In both cases, the progress of the cure would be interfered with, and the body would not only have to "stop" and eliminate the new matter which had been introduced, but all the old and still uneliminated matter as well—so that the progress of cure would really be interfered with—to just that extent. The ingestion of food is, therefore, a hindrance, and the practice of terminating a fast before natural hunger has returned cannot be too strongly deprecated.

If food be administered to a patient who is undergoing a fast, and before the fast is naturally terminated—and seen to be so, by the return of hunger, and other symptoms we have listed—the result would be very detrimental. Suppose we have a patient who has fasted sixteen days. He thinks he has fasted “long enough,” and wishes to break his fast—though the tongue is still coated, the breath is still bad, etc.—showing that the fast is, in reality, not yet ready to be broken. If we allow a patient in this condition to break his fast, and eat a meal—even if he only eats one mouthful of food—a very curious and instructive set of phenomena will be observed.

The tongue, previously so coated, will *instantly* clear; the breath will become sweet; the temperature will rise, and hunger will return thenceforward at periodic intervals—though there may have been no hunger during all the sixteen days of the fast! What are we to think of these physiological phenomena?

The conclusion we must draw from this set of facts is this: The administration of food, even in small quantities, has had the effect of *breaking the fast*—stopping entirely, for the time being, all efforts of elimination (which had been observed in the tongue, breath, etc.) and turned these energies into the direction of digesting food once more. Thenceforward hunger returns at regular intervals, because the fast has been broken; elimination has largely ceased; the energies of the system have been diverted from their work of cleansing, and into that of digesting food.

This brings us to another point. Hunger is very rarely experienced after the first three days of a fast. These are the trying days—when the system is becoming adjusted to the changed condition, and when vast quantities of morbid material is deposited in the blood stream, and carried to the head, by means of the blood. It is because of this fact that many experience headaches, etc., during the early days of a fast; but the obvious remedy for this condition is, *not* to break the fast, but to continue it, and thus rid the system of the accumulated poisons the sooner. After these initial days, hunger will invariably disappear and will not again return until the termina-

tion of the fast—whenever that may be. The return of natural hunger is a sure sign that the fast is terminated, and the system has been cleansed of its diseased condition, and is again ready for food.

This brings us to an important point, which is too frequently misunderstood even by those who write about fasting. It is the distinction which must be drawn between *fasting* and *starvation*. The failure to understand and appreciate this difference is one of the chief causes of disagreement between the advocates and adversaries of this system of treatment. It is accordingly very important that we should appreciate this.

Fasting is only possible at all when the system is overstocked with food material. When this is not the case, starvation begins at once. So that, in the case of a patient who has been undereating for some considerable time, he would begin to starve if he went without his food. On the other hand, the majority of us overeat; so that when we stop eating, we fast, and do not starve. I can, perhaps, best illustrate this difference between the two processes by quoting a passage from "Vitality, Fasting and Nutrition," by Hereward Carrington:

"Fasting is a scientific method of ridding the system of diseased tissue and morbid matter, and is invariably accompanied by beneficial results. Starving is the deprivation of the tissues from the nutriment which they require, and is as invariably followed by disastrous consequences. The whole secret is this: Fasting commences with the omission of the first meal and ends with the return of natural hunger, while starvation only begins with the return of natural hunger and terminates with death. Where the one ends, the other begins. Whereas the latter process wastes the healthy tissues, emaciates the body, and depletes the vitality; the former process merely expels corrupt matter and useless fatty tissue, thereby elevating the energy, and eventually restoring the organism 'that just balance we term health.' As Dr. Dewey said: 'Take away food from a sick man's stomach and you have begun—not to starve the sick man, but the disease.' There is the whole science of fasting in a nutshell."

From this definition it is possible for us to understand the ill effects of breaking a fast prematurely. Suppose that a patient's body is in such a condition that a thirty-day fast is necessary to restore it to perfect health. Suppose that he has fasted fifteen days, and then decides that he has fasted "long enough," and that he desires to break his fast. If he does so (contrary to the indications of Nature) he will be only *half cured*; that is, he will be cured to the extent which corresponds, organically, to the length of time fasted. Many patients do this, and afterward complain that they have tried the fasting cure, and were not cured in consequence! The truth is that they only gave it a half trial and probably over-ate afterward, and naturally were not completely cured. If a fast be undertaken, it should be followed "to a finish," or else a partial fasting regimen adopted from the beginning. That, at least, is my advice, based on considerable experience of fasting cases.

The practical question now presents itself: How shall the fast be broken? Having answered the question, When? and having seen that Nature will always clearly indicate this by the manifestations of certain symptoms, which cannot be mistaken, the next question which arises is: On what foods shall the patient break his fast, and in what quantity and proportion? This is a very important aspect of the fasting problem, and a full discussion of the point is quite necessary.

Let us divide the reply into two parts: (1) The question of *quantity*; and (2) the question of *quality*—of foods eaten at this time.

(1) *Quantity*. As previously stated, the quantity or amount of food which is needed at the end of a fast is very limited indeed. For the first week or so a gradually increasing amount may be given each day, until a regular diet is again reached. It is best, however, to warn the patient that he will not, in all probability, crave so much food as formerly; and, if possible, endeavor to persuade him to eat only two meals a day, in future, and to thoroughly masticate each morsel of food eaten.

The first day should consist of *liquid food only*, and I

strongly advise everyone to break his fast on liquid food. Let me again emphasize the great importance of keeping the appetite in restraint during this first week after the fast is broken—when a ravenous appetite is sure to occur—or else much of the good of the fast will be offset, and grave danger has been known to result from eating too much at this time.

(2) *Quality*. As to the *kind* of food eaten, this is a much-disputed point. Dr. Dewey was of the opinion that any food which was craved should be allowed; but this, I think, is certainly a mistake. I have known the most “outlandish” things craved at this time—things which would certainly have injured the patient, had he eaten them. It is curious that this should be the case, too, since the appetite is supposed to be most normal at this time, when every function is working perfectly.

I am forced to the conclusion, as the result of weighing all the evidence very carefully, that the reason for this is that a man usually craves, when hunger is again restored to him, the things he is *accustomed* to eat—the things he anticipated and looked forward to, as soon as the fast was broken. Thus, if an Eskimo fasted, he would doubtless crave fat and blubber at the conclusion of his fast. If an Englishman of the ordinary type fasted, he would probably crave roast beef and boiled potatoes! I have known several fruitarians who fasted, at various times, and they invariably craved fruit and nuts. The reason, therefore, is based on psychological rather than upon physiological grounds. The appetite craves what it *expected* to crave; and the exceptions to this consist, for the most part, in those cases where some dish has been smelt in the process of cooking, and the odors have so appealed to the patient that he thought of and craved that food, and none other!

But instinct and reason do not always coincide, and although the patient may crave certain dishes, it is not always advisable to give them to him simply because he wants them. On the contrary, I am disposed to think that, save, perhaps, in very rare cases, it would be well invariably to break a long fast according to certain definite rules. All organisms are *fundamentally* alike, however much they may differ in detail, and

the following would be my advice, therefore, in breaking fasts of considerable length.

First day. When a fast is ready to be broken, and seen to be so by the attendant in charge, a glass of slightly diluted orange juice should be given. This should be sipped and washed around the mouth before being swallowed. This may be given two or three times during the day. There are some people who cannot take orange juice well, and in such cases some other fruit-juice may be tried—such as grape juice, apple juice, etc. These should not be too cold, and should have very little sugar in them, if any. Some fruit-juice is, I am persuaded, the best food upon which to break a fast, and will be well borne in nearly all cases.

Second day. The patient must be careful not to over-eat the second day, which he is very likely to do, because his hunger will have returned in more or less full force, and the appetite is keen. It is, however, most important that the craving felt at this time be kept under strict control, if the best results are to be obtained. In fact, as said before, grave danger may result if caution is thrown to the winds at this period. Following the fruit-juice on the first day, several diets are open to the patient, which I shall enumerate.

The best diet for the second day is, in my estimation, a simple and exclusive fruit diet, composed wholly of juicy fruits. Oranges should again form a part of the meal, this day, and peaches are especially to be recommended, if they are in season. Plums are also good, and a few strawberries might be tried, though they do not agree with many people. I should not recommend the use of pineapple at this stage of the cure. Apples are very fine fruit, and are in many ways desirable. They have, in fact, been called "the king of fruits," and they certainly deserve the name. Bananas are very "heavy," being literally the "bread of the tropics," and should be very thoroughly masticated, if eaten. Dates and figs, though they are excellent foods at other times, I should not recommend at this period. Pears are very good, if found to agree. Grapes are excellent; indeed one could hardly recom-

mend any fruit which would be better to eat during the few days following a long fast than an exclusive grape diet.

On the second day not more than two of these fruits should be eaten at the same meal, and it would be far better if only one of them were eaten. Oranges and peaches are the two fruits I should advise above all others. It would be well to limit the diet exclusively to these fruits for several days following a fast, until a more liberal diet is begun.

Some natures (a few) do not take kindly to the exclusive fruit diet, and in such cases another diet must be found to take its place. Eggnogs are good (of course without liquor) and may be taken three times during the second day, if desired. They must be eaten slowly, as usual. It would be safe to adhere to this diet for several days after a long fast.

Third and succeeding days. The first two or three days after breaking a fast are the days on which great care must be exercised: following these, a very gradual increase in the quantity and complexity of the diet may be allowed. A couple of soft-boiled or poached eggs, dry toast, and a glass of milk might be allowed on the third or fourth day; or whole wheat bread, nut butter and a small fruit salad. Custard, well made, is good food; but again the patient must be made to *chew* it. Sometimes salad is found to agree with the patient; but I should never advise this, unless it were especially craved. A dry and exclusive cereal diet may be found beneficial in some cases; but in all such instances the patient's appetite should be to some extent consulted, and he should be gradually allowed the food which he particularly craves—unless, of course, it is found to disagree with him. While simplicity counts for much, in these ensuing days, the question of *quantity* is, in my estimation, of even more importance, and the small quantity of food allowed should be particularly insisted upon.

In most cases, however, a *milk diet* should be taken for several weeks. As this system has proved so very satisfactory in many cases, I will merely outline it. On the day of breaking the fast nothing but fruit-juices should be taken.

On the *second day* a glass of warm (not hot) milk every two hours. This must be thoroughly "masticated," as usual.

Third day. A glass of milk every hour—certainly not more frequently.

Fourth and succeeding days. A glass of milk every half-hour.

The result of this milk diet will be to build up the system and restore lost weight in a remarkable manner. Strength is soon regained, while the system is flushed thoroughly with "a superior quality of nourishment." Certainly, the system has been found to be remarkably successful wherever tried, and it will doubtless be found to yield splendid results in a large number of cases.

A word, finally, as to breaking the fast artificially—because of the appearance of certain alarming symptoms, which may develop during the fast—vomiting, fainting, an exceedingly feeble pulse, etc. Generally speaking, it may be said that it is not advisable, at such times, to break the fast; but this is an exceedingly complicated question, which requires special and individual study, and no general conclusions can be arrived at without such individual study. Here is presented the one and only *real danger in fasting cases*, and the student would do well to study such instances well before launching himself or others upon a protracted fast. This is a subject to which too little attention has been paid in the past, and it is earnestly to be hoped that it will be studied more in the future, when fasting becomes more widely accepted and employed as it should be: as a therapeutic measure of the first importance.

LOSS OF WEIGHT DURING THE FAST.—From a study of a large number of fasting cases, I have come to the conclusion that the average loss of weight is about one pound per day. Some persons lose less than this, but the majority lose slightly more—especially during the early days of a fast. Very fat persons naturally lose more than thin persons; and in some cases people have been known to lose three or four pounds a day, for a number of days! During the last days of a pro-

longed fast, however, matters are usually "evened up." The patient loses *less* than the pound per day, so that the *average* is, as before said, about one pound per day. Mr. Carrington has published a table, composed of columns showing the loss of weight suffered by ten selected patients, of all temperaments, and he found that 248 pounds were lost in 253 days. This is practically a pound a day.

I can see no reason for a normal man to fast—providing there are any normal men. Fasting is for those who, because of toxemia or other abnormal conditions, require this method for body purification by the removal of an excess of morbid material or for the reduction or cure of definite disease condition. But if, for experimental or other purposes, a normal man desires to fast, *how much* should be expected to lose?

If an excessive amount of exercise is not taken, I am convinced that *twelve ounces a day* would be the normal weight-loss. This was the amount of food which Cornaro allowed himself, it will be remembered; and this is the conclusion arrived at by both Dr. A. Rabagliati (see his "Air, Food and Exercises," pp. 121, 286-8) and by Mr. Carrington ("Vitality, Fasting and Nutrition," pp. 470-71). As the latter says, when speaking of this question:

"From the above facts, a highly important deduction can be drawn, an extremely significant conclusion reached, which, in fact, affects the welfare of the whole human race. If such be the case, we have here, at last, a scientific basis for calculating *what the average intake of food should be* by those in health (and who wish to remain in health); for, since we have seen that the amount of the 'income' should be proportioned to the 'outgo' of food, if we are to retain 'that just balance we term health,' then it follows, as a matter of course, that twelve ounces of nutriment daily is all that the body needs in order to preserve its weight and replace whatever tissue has been lost, as the result of the day's muscular exertions or tissue-destruction."

This, therefore, gives us a clue to the amount of food which

one should eat, in order to remain in health. It does not mean, of course, that only twelve ounces of total food-stuff should be eaten during the day, because a large percentage of this is water; but from twenty to twenty-two ounces a day should be enough to supply all the material which the body needs, even when taking a fair amount of exercise. More than this is disease-producing.

In some cases, odd *gains* in weight have been recorded—cases in which the patient, instead of losing weight, has actually gained it! In such cases, what probably happens is this: The tissues throughout the body are very dry and dense, “obstipated,” as they are called, and when such a person fasts, he or she oxidizes off a part of this too-solid tissue, and fills in the interstices with water, which the patient is at liberty to drink during the fast.

CRISES: AND WHAT TO DO WHEN THEY OCCUR.—During a fast of any length, many strange phenomena are often noted, which are liable to frighten the patient, and even the attendant physician, unless he is prepared for them, and knows what to do. In the first place, it has often been noticed that diseases which have been suppressed years before, by drugs, etc., frequently develop troublesome symptoms during the fast, showing that the disease was never *really* eradicated at all.

I have known of several cases of syphilitic infection in which this occurred, although the patient had been considered “cured” years before. These symptoms need not alarm the patient, however; since they will rapidly disappear if the fast be persisted in. In fact, the speediest way to effect the cure is to fast; so that these manifestations may be treated in the same way as the original infection. Should such symptoms develop, I advise the patient very strongly *not* to break the fast, until they have disappeared. If so, they may cause much trouble. Hydrotherapeutic measures of all kinds are very essential at such times.

The following are some of the symptoms which may develop during a fast, together with the proper treatment:

Fainting. Should the patient become faint, he should be treated exactly as he would be if he had fainted at any other time. Fainting is due to lack of sufficient blood in the head; so all that it is necessary to do, is to place the patient first on his back, and elevate his feet in the air. (See *First Aid*.) If he is seated in a chair, and you are in a crowded hall, etc., merely hold the patient's head between his knees for a few moments, and the blood will soon return to the head, and consciousness be restored. *Never* prop up a fainting patient; for in this way several deaths have resulted.

Dizziness. This is usually due to the same cause, and may be treated in like manner. It may result from an *excess* of blood in the head, on the contrary, in which case the head should be kept high. Quiet and rest are essential. See that plenty of fresh air is supplied to the patient.

Cramps in the bowels may develop, which should also be treated along First Aid principles. A full, warm enema will often bring relief. Hot fomentations applied externally over the abdomen will afford great relief; or a hot water bottle, though this is not nearly so effective. Gentle kneading of the parts may also prove beneficial; and the application of the bare hands has a wonderfully soothing and pain-allaying effect.

Retention of the Urine. Whenever the bladder is not emptied during the course of the day, if the patient has drunk freely of water during that period, "retention" may be assumed. Cold sitz baths will usually bring about immediate relief; or alternate hot and cold sprays directed against the lower part of the abdomen. Gentle pressure or kneading might also be tried, following such treatment by dashes of cold water. These measures may be continued for some time; but should they fail (which is exceedingly unlikely), recourse must be had to the catheter.

Diarrhœa. It is very rarely that this develops during a fast—the reverse condition is almost invariably present. Should such a stage of affairs develop, however, it should be treated as it would be in any other case. (See Vol. IV.)

Headaches. These frequently occur during the early days of a fast. All who have had any experience with fasting know that such is the case. I have already indicated the cause of this, and the measures to be adopted in dispelling them.

"A Bad Taste in the Mouth." This has already been discussed.

Pain in the Heart, Palpitation, etc. This condition is almost invariably due to gases in the stomach, and other digestive disturbances, and will not appear during a fast, except at a curative crisis. Says Dr. Schofield (*Nerves in Order*, pp. 63-64):

"To understand what is the matter, we must picture the heart sitting on the end of the stomach something like—to use a striking illustration—a donkey-boy sits on the hinder end of the ass; so that when the donkey kicks, the boy begins to 'palpitate' on his back. In like manner, when the stomach 'kicks,' or is distended in any way by food, it often sets the heart off palpitating; and in this way the heart gets the blame while the stomach is the culprit."

Abnormally Slow Pulse. This sometimes occurs during fasting; and while it is not a serious condition, it requires bringing up to normal, occasionally. Hot baths or a little gentle exercise will effect this, as a rule. Deep breathing exercises may also be tried. Friction, massage, suggestion, will all have their effect. As a rule, the pulse will soon return to normal.

Abnormally Rapid Pulse. This is one of the most serious symptoms which develop during a long fast. At times, the pulse runs up to such a rapid rate that it is almost uncountable; and when this occurs the patient is, of course, in a dangerous condition, and every effort must be made to lower the pulse immediately. Strenuous measures must be adopted. Dr. Kellogg advises the use of a cold or cool bath at such a time; but my experience is that this serves to stimulate the heart to even greater activity, instead of reducing it; and hence is to be avoided. Mr. Carington advises the use of a warm bath, the same temperature

as the body of the patient (that is 98.6 degrees), for in this way the blood is *slowly* drawn away from the inner organs to the surface, and the interior congestion is relieved. Cool packs over the abdomen may help, but these should not be *cold*. Suggestion, given by an expert, may prove of most valuable assistance at such a time. The patient's head should be kept cool, and his feet warm. Rest, quiet, plenty of fresh air are essential.

Vomiting. This is one of the most serious symptoms which can develop during a long fast. I have known of some cases in which everything went beautifully for thirty or forty days, and then the patient began to vomit, and vomited continuously for several days.

Immediately upon the appearance of a vomiting spell, the patient shall be given all the hot water he can possibly drink—two quarts or more, if necessary—the object being to facilitate the eructation, and to cleanse the stomach of the offending, irritative material—the probable *cause* of the sickness. All restricting dress should be loosened. The patient should be removed at once to the outer air—of which he should breathe deeply and regularly. Rest, physical and mental, is an important requisite.

If, however, vomiting should continue, in spite of the above measures, more decided treatment must be employed. Hot and cold baths may be administered. Suggestion may prove highly beneficial and useful at such times. Spinal manipulations, hot fomentations, cold compresses, etc., may all be tried. A little glycerin, added to a glass of hot water, and swallowed by the patient, has been known to produce a remarkably soothing effect.

It is certainly inadvisable to break the fast at such a time. If food be administered at such a time, it will almost certainly be ejected, and it may aggravate the vomiting all the more. Dr. Dewey records a case in which vomiting began after fasting fifty days. Food was tried, but promptly ejected. There was nothing to do but wait, with the result that "One day after the last vomiting spell, there was a natural call for food—and

this on the *sixtieth* day of the fast." "Had this man died," continued Dr. Dewey, "such was his prominence, I should have been paraded as a criminal of the stupid kind in the entire press of America, except in the papers of my own city."

In a personal letter written to Mr. Carrington, dated March 26, 1903, Dr. Dewey wrote:

"Only God could break a fast where there is a sick stomach and there is no time to let Nature perform the task. Taking food into such a stomach would be death-dealing. There is nothing to do but make the body and mind as comfortable as possible and Nature will cure, if the seal of Death is not set."

It must not be thought from the above, however, that these symptoms *usually* develop during a fast, or that they are at all common. On the contrary, they are extremely rare—only a few cases ever having been recorded, out of the thousands of fasting cases which have been studied. In the vast majority of cases, a fast and even a long fast, may be undertaken in perfect safety, without the appearance of any unpleasant symptoms.

There is a certain risk of death, it is true, when a very long fast is undertaken, but only the most severe cases should be treated by long fasts.

FASTING IN ILLNESS.—The question is often asked: "Is it safe for the very sick to fast?" I reply: It is certainly safe, and as a rule the sicker the patient the more does he need a fast! In fact, he only needs a fast because he is ill; and if he were perfectly well, and began to go without his food, he would be starving instead of fasting, since he would not need to go without food at all. Such a question, therefore, shows, a misunderstanding of the problem, and can only be justified upon two grounds: (1) *In tuberculosis*, as before said, a long fast is not advisable, in the present state of our knowledge, and should, as a rule, be avoided. (2) *In extreme emaciation*. Here we must be guided by the *cause* of the condition. It may result from constant over-feeding, in which case a short fast would prove beneficial, and would fit the body to receive the

nutriment given it afterward. On the other hand, if it is due to too little food, fasting is not what is needed, but feeding. This must be begun gradually and cautiously. A milk diet is excellent in such cases.

If the patient is extremely weak, a fast may or may not be indicated. If this weakness is due to a long-standing disease, and accompanied by great emaciation, a long fast is counter-indicated. If, on the contrary, there is a good deal of flesh on the patient, and there are indications that the weakness is due to poisoning, and other diseased conditions; in other words, if the weakness is the "weakness of disease," a fast, and a fairly long fast, may prove highly beneficial, and as it progresses it will be found that strength increases and does not decrease. In several cases treated by myself, and also in a number of cases quoted by Dewey and Carrington, the strength increased from day to day, until the patient was enabled to walk several miles a day toward the close of a long fast, whereas at first he was unable to walk at all!

Many persons have asked whether or not it is advisable to fast for *anæmia*. In nearly all cases, I should reply, "Yes." This is directly counter to the advice which would be given by the regular physician—as they feed up their patients for *anæmia*, and would probably think that fasting, under the prevailing conditions, would be death-dealing! This, however, is not at all the case. *Anæmia* is due to lack of proper nutrition, it is true, but this lack of nutrition is brought about, not by *too little* food, but by *too much*—for which fasting is the remedy. In order to make this plain to the reader, I quote the following passage from a work by A. Rabagliati, M. D., F. R. C. S., etc., a cancer specialist and well known as an expert surgeon:

"The *anæmic* girl is in a state of indirect, not direct, *anæmia*. Her circulation is really blocked. It is in a state which may be called 'constipation of the circulation.' The muscular elements of the vessels, and particularly their transverse fibers, are hypertrophied, and being, besides, overstimulated, they go into a state of excessive contraction. The

effect of this is to narrow the lumen of the vessels, and to prevent the blood from flowing freely along them, and by this means, of course, a proper supply of blood is prevented from reaching the tissues. The consequence is that the girl appears pale and anæmic, and no doubt is so. But the cause is really an excess of food supply, which in the first instance caused the muscular elements to hypertrophy, and, as the over-circulation of too much food * * * continued, the hypertrophied transverse muscular fibers contracted and narrowed the lumen of the vessels. The process is really a beautifully adapted provision of Nature to limit the blood supply to parts which have already been over-nourished, and which tend to become still further hypertrophied if the nutritive process were carried still further. The process is plainly one of starvation, due to over-repletion, caused by contraction of hypertrophied or over-fed muscular fibers. And, obviously, the means of treatment proper to such a state is to restrict the diet until, some of the hypertrophy of the muscular fibers of the vessels having been removed, some of the spasm passes off, the blood flows more freely, and the anæmia is reduced. To recommend more food, as is so often done, is to do the precise opposite of what good treatment demands. The meals ought to be reduced in number and quantity, not increased." ("Aphorisms, Definitions, Reflections and Paradoxes, Medical, Surgical and Dietetic," pp. 200-1.) It will be noted from the above that anæmia, like nearly all other diseases, is in itself, in reality, *a curing process!*

It has often been contended that fasting for anæmia must necessarily be harmful, since anæmia is largely due to the absence of red corpuscles in the blood, and, in order to increase them, iron and other tonics are administered. Were we to take away food (and thus still further reduce the number of red corpuscles), great and possibly irretrievable harm would result. Thus reasons the medical man!

As a matter of fact, however, fasting does not decrease, but, on the contrary, *increases* the number of red blood corpuscles—contrary to all-but-universal belief. The following passage

from Dr. Rabagliati's "Air, Food and Exercise" will prove this:

"The first effect of a fast is to increase the numbers of the corpuscles of the blood. Now, as the function of food is to make blood, and as the food therefore makes the corpuscles, it seems at first sight impossible to conceive how stopping or greatly diminishing the food supply can increase the number of the blood corpuscles! It *ought* to diminish them, and in fact, in course of time, it does diminish them. But the explanation is really very simple. Most of us are over-fed, and the consequence of this is that the tissues are blocked and choked, because too much material finds its way into the blood. This directly prevents the blood-making processes from going on. The process is checked because the capillary vessels, the lymph spaces, the lymph ducts, and the muscular coverings and the tissue coverings, and the connective tissues generally, are blocked. Consequently there is an accumulation of waste unused material in the body. The accumulation often lowers the temperature and prevents and checks the accomplishment of all the processes of the body, and, among the rest, of the important process of the manufacture of the blood corpuscles. * * *"

A FEW HINTS FOR FASTERS.—Almost everyone who fasts will find a certain amount of difficulty in getting his bowels to move during a fast; and, often, days will go by without any movement, if they are not moved artificially, by means of enemas, etc. But enemas are somewhat enervating, and when the patient is already weak, he may find it a drain upon his vitality to take many of these. Some physicians, such as Dr. Guelpa, for example, give their patients a mild purgative, for instance, a whole bottle of Hunyadi water, every day for two or three days. This is not to be advised, as a rule, though the good which this will accomplish will often more than offset the harmful effects of the minerals contained in the water. A far better and more rational method would be to live, for a few days before the fast, on laxative foods—such as fruit. This would serve a double purpose. In the first place, it would

open the bowels, and clean them out, more or less, before the fast begins. This is greatly to be desired. In the next place, it would enable the patient to enter upon a fast far more easily than he otherwise would, because he will not notice the lack of stimulation, which the ordinary food supplies. Fruit, being non-stimulating, renders the transition gradual and easy. Says Dr. Trall:

“I have often noticed, in conducting a water-cure establishment, containing more than a hundred inmates on the average, about half of whom were either vegetarians in principle, or were restricted to an exclusively vegetable diet by special prescription, that such patients can bear fasting for a time much better than the flesh eaters; and they usually suffer but little, in comparison with those who enjoy a mixed diet, from the craving sensation of the stomach, on the approach of the dinner or supper hour. To this rule I have never known one exception.”

The thing to do, before undertaking a fast, is to be in *sympathy* with the idea—to understand and appreciate it, and be more or less familiar, if possible, with the literature bearing upon the subject. Remember that fasting is not a pleasant experience; but neither is being sick a pleasant experience, and no other system of medication is pleasant either. One comfort about fasting is that you know it is *really curing you*; and that is more than can be said in favor of most of the other systems of medication. Every day is just that much gained; and the longer you fast the better you are—until hunger supervenes. Do not be alarmed. It is impossible to starve to death until the “skeleton condition” is reached; and hunger will always come along before that stage has arrived. Fasting, wisely conducted, is the safest, simplest and speediest method known of ridding the system of disease.

THE SCIENTIFIC STUDY OF FASTING.—In spite of its antiquity, however, it is only within the last few years, comparatively, that fasting has come to be studied seriously and scientifically. Before then, it was considered simply an accessory to religious fanaticism—and many persons still consider it so!

About the middle of the last century, however, several physiologists, mostly Italians, began to study fasting cases, that is, those professional fasters who abstained from food for many days at a time, for public or show purposes. Luciani did this and has published a very valuable work on the subject. A few others followed his example. But their cases were invariably *healthy* men, who began to go without their food for no reason, except for the purposes of investigation or gain, and, consequently, these cases represent more nearly cases of *starvation* than of *fasting*. A man can only fast with benefit when he is ill. If he is well, and goes without his food, he commences to starve at once; and the two processes are very different. Hence the physiological experts observed only cases of starvation, and not fasting cases at all. The therapeutic side of the question seems to have been missed by them entirely!

A good proof of this is afforded by a study of Prof. Francis Gano Benedict's voluminous work, "The Influence of Inanition on Metabolism" (Carnegie Institution Report); and as this distinction is clearly brought out in the report, and as this was the first lengthy report devoted to the scientific study of fasting in the English language, I cannot do better than to summarize his results herewith.

This remarkable report is divided into several parts.

Part I is largely introductory, detailing the means used to test the accuracy of the results obtained and the methods of procedure. The author divides "fasts of more than one day's duration" into six classes, but there is said not one word as to the value of therapeutic fasting—its possible use in that direction does not seem to have entered the author's mind! Curative, medicinal fasting is so novel a theory to the average man's mind, that he has never even considered it seriously. It is not to be wondered at, then, that Prof. Benedict does not consider this aspect of the question throughout his whole extensive volume. And this being the case, and inasmuch as the cases studied by him were normal and in good health, I must insist that his results were to some extent vitiated, and that entirely

different results would have followed if he had studied patients diseased, *i. e.*, therapeutic facts. I shall return to this again later.

The remainder of Part I and the whole of Part II we can afford to skip, since very little matter can be quoted here—the whole of Part II being a mass of figures. The fasting experiments last from two to seven days, and the subjects were all young men in good health (p. 19). The discussion of the results attained is reserved for Part III.

The part opens with a brief historical sketch, giving a list of books that have been published, detailing experiments that have been made in the past upon fasting patients. These were all very much of the same general character, inasmuch as they were all conducted with healthy subjects, and the investigators, without exception, granted and accepted the validity of the present theory—that the energy of the body is derived from the food. Following this, there is a long section devoted to a study of the body-weight during a fast, and this is very interesting and instructive. I quote a few passages:

“In instances of so-called complete fasting, *i. e.*, where no drinking water is consumed, the loss of body-weight might be expected to be larger than in those experiments in which water was taken, although the drinking of large quantities of water is almost immediately compensated by the voiding of large quantities of urine. Nicholson made observations on a fasting prisoner whose body-weight at the beginning was 107½ pounds, and 100½ pounds at the sixth day, after a small portion of food had been taken. * * * There was an average daily loss of 1.4 pounds during the period of starvation, the greatest loss appearing during the first part of the experiment. * * * A fast reported to have been made by Tanner and lasting 45 days showed a change of body-weight from 71.7 kg. at the beginning to 60.0 kg. at the end of twenty-five days. During the first sixteen days, the account states that Tanner pretended to drink no water, though he rinsed his mouth with it from time to time. In this period he lost weight rapidly. After the sixteenth day, drinking-water

was taken as desired, and it is stated that he actually gained $4\frac{1}{2}$ pounds in weight during the next four days, after which time he again commenced to lose weight." (pp. 301-3.)

It will be seen that there is considerable skepticism as to the reality of Tanner's fast. The medical profession have always doubted its accuracy, though just why it is hard to see. There is no evidence, either in the contemporary accounts or in any subsequent evidence, to show that Dr. Tanner's fast was not such in reality, and was not carefully and conscientiously conducted. It was only the novelty of the idea, evidently, that aroused skepticism.

The net result of these experiments proved that no conclusions could justly be drawn from fasts of so short a duration, and that the results obtained and studied were so self-contradictory, that nothing could be said one way or the other, and no positive conclusions arrived at. "Losses in body-weight in experiments of but a few days' duration are wholly without significance. With regard to the total cumulative loss as the experiment progresses, it appears that in long experiments of Succi the loss bears in general a direct ratio to the length of the experiment." (p. 310.) This was also my own conclusion. But I, fortunately, had the opportunity of watching a number of cases of twenty, thirty, forty and more days' fasting, and found the daily loss to average about one pound per diem. This was based upon observations of ten patients, who lost 248 pounds in 253 days' fasting, or nearly one pound per diem. It is probable, however, that this is too large an amount for those in health, who would lose less—about 12 ounces. (See my discussion of this point, in this volume, p. 1365.) The experiments conducted in the laboratory of the Wesleyan University were far too short to arrive at any definite conclusions, in this direction, therefore, so far as the body-weight was concerned. The fasts were not long enough.

Let us now turn to consider the next section—devoted to "Body Temperature." The universally accepted theory is that the bodily temperature is dependent upon the combus-

tion of food-material within the system, either direct or indirect, *i. e.*, after it has made the bodily tissues, which are consumed in turn. In either case, the temperature is supposed to depend upon the food consumed, and its combustion within the organism; just as the fuel of the locomotive is supposed to supply the heat required to run the engine, just so is the fuel of the body (the food) supposed to supply it with heat and maintain its temperature; and this would seem to be supported by the fact that when this combustion ceases (at death) the corpse cools to the temperature of the surrounding air. It is obvious, therefore, that were we to withdraw the food, the temperature would *sink*; the cause of the temperature, the *source* of the bodily *heat* having been withdrawn, the heat itself must sink. Thus says physiology, and, if the theory were true, there would be no question of its accuracy; such results would invariably ensue.

However, the figures of Dr. Benedict do not afford any proof whatever of the theory that we derive our bodily heat from the food consumed, but, on the contrary, seem to show quite conclusively that for periods of seven days or less, at any rate, the heat can be maintained without any food at all, and that it, occasionally at least, tends to *increase* as the fast progresses. My own cases, carried to a much longer period of time, showed the same thing. How such facts could be if we derived our bodily heat from the food consumed, as is universally taught, is a mystery.

The next section is devoted to the Pulse Rate. The chief historical cases are reviewed, the results being that, in some cases, the pulse remained normal, and in others rose or fell. No definite conclusion was arrived at, one way or the other, as the result of a study of these historical cases. Nor were the results obtained in the present series of experiments much more decisive.

The Respiration Rate is next studied—various minor fluctuations being recorded. These were but slight, however, the conclusion being arrived at that, “at least during the first two days of fast, the pulse rate is much more liable to fluc-

tuations than the respiration rate." (p. 322.) The changes noted were, therefore, of very small moment.

The Blood is next studied, very much more interesting results being obtained. As usual, the famous historical cases are first passed under review.

"Senator and Mueller, in reporting the results of their examinations of the blood of Cetti and Breithaupt, note an increase in the red blood corpuscles with both subjects. * * * * * In a later examination of Succi's blood by Tauszk, the conclusions reached were: (1) That after a short period of diminution in the number of red blood corpuscles there is a slight increase; (2) that the number of white blood corpuscles decreases as the fast progresses; (3) the number of the mononuclear corpuscles decreases; (4) the number of the eosinophiles and polynuclear cells increases and finally that the alkalescence of the blood diminishes. * * *"

The newer experiments agreed with these results almost entirely. This part of the report will stand very careful perusal.

Strength tests are next considered, and this portion of the report is very interesting. Were our strength and energies dependent upon the daily food, they should, of course, wane and decrease upon the withdrawal of the food supply—the supposed *cause* of the energies. Let us see how far the observed facts bear out this theory:

"The tests made by Luciani on Succi in which a dynamometer was used to measure the strength of the right and left hands, showed results seemingly at variance with the popular impression. Thus, on the 21st day of the fast Succi was able to register on the dynamometer a stronger grip than when the fast began. From the 20th to the 30th days of the fast, however, his strength decreased, being less at the end than at the beginning of the fast. In discussing these results, Luciani points out the fact that Succi believed that he gained in strength as the fast progressed, and hence probably did not exert the greatest power at the beginning of the experiment (?). Considering the question of the influence of inanition on the onset of fatigue, Luciani states that the fatigue curve obtained

by Succi on the 29th fast day was similar to those obtained with an individual under normal conditions. * * *

Other tests more or less agreed with this one. Some subjects appeared to gain in energy, others to lose it, but on the whole, the variations were slight, and the results more or less self-contradictory. Dr. John E. Loveland, who reported upon the cases, stated that: "On the fourth day of the fast the force of the pulse appeared less than on previous days. On the fifth day there was an irregularity noted, the individual beats varying in force. On the sixth and seventh days of fasting, and the first day with food, the force appeared greater than on the other five days. At no time did the pulse rate and force appear to approach a dangerous condition. At the end of the fast the subject was in a condition that, in my opinion, would have warranted his continuing the fast with impunity." (p. 335.)

Most interesting and significant are the "Subjective Impressions" that follow. As the author says: "It is commonly believed that the withdrawal of food for one or two meals results in dizziness, a feeling of faintness, and, at times, in pains in and about the epigastrium." This is what is *supposed* to happen. As a matter of fact, what *does* happen? While in some cases, discomfort was noticed (as has been described) in the majority of cases no such symptoms were observed at all! On the contrary, unusual vigor and strength were noted! How are such facts to be accounted for, upon the theory that the strength is derived from the food? I quote from the report as follows:

"The fast of Merlatti, which was said to have continued 50 days, was characterized by extreme discomfort, pain, and sensation of coldness. During the 30-day fast of Jacques, the only marked discomfort noticed was a slight attack of gout which appeared on the sixteenth day. In the numerous fasts of Succi, no marked discomfort was observed. In fact during his fast at Florence his cheerfulness and apparent good health were the subject of much comment. It should be stated, however, that both Jacques and Succi took small amounts of

narcotics from time to time throughout their fasts, though, as Prausnitz has pointed out, this may have been as much to stimulate a popular interest in the concoctions as to dull the senses of any possible pain, except possibly during the early days of the fast. Celli experienced considerable discomfort during the first one and one-half days of his fast, but this suddenly ceased after a movement of the bowels. * * * The records of the subjective impressions of J. A. in the experiments in the Stockholm Laboratory, show that on the first day of the fast he noticed no dizziness. On the second day, while his general condition was good, he observed unusual weakness following a slight muscular exertion. On the third day he was not in a little discomfort and was dizzy when climbing on a short ladder inside the respiration chamber. On the fourth day, the pain in the stomach disappeared and no dizziness was noticed in the experiment on the ladder. On the fifth day the general condition was excellent, and there was no pain or discomfort in the stomach. His strength, too, was greater (N. B.) although he noticed that if he arose suddenly from the bed there appeared to be black spots before his eyes. * * * In Prausnitz's opinion, the feeling of discomfort attending hunger is, in many instances, a purely physical condition. * * * It seems, therefore, that from the experiments made in this laboratory, the conclusion can properly be drawn that fasting, *per se*, produces no marked symptoms of pain or weakness, at least during the first days of inanition." (pp. 335-37.)

The next sections of the report are very interesting and far less open to speculation and controversy than those sections just noted. I mention them briefly, in turn. First, we have the feces. I quote briefly from the report:

"Fasting * * * affects first the amount and regularity of the defecation. * * * Owing to long retention in the colon, fasting feces become hard, much dried and pilular, and frequently cause considerable uneasiness. Much difficulty is experienced in passing them, and at times they may cause considerable pain with slight hemorrhages. The use of an

enema to remove the fecal matter during inanition is quite common. This method was employed throughout the 30-day fast of Succi—reported by Luciani. * * * Depending upon the amount of food consumed on the day previous, the defecation of the first day of fasting may be quite as regular as on the ordinary food days. * * * The most important factor noted was that feces were frequently retained for a number of days together, during fasting, with no apparent attempt on the part of Nature to effect a movement—a fact noted by myself also. The section concludes: “Chemical as well as microscopical examination of all feces passed during fasting experiments considerably longer than these are essential for a proper understanding of the nature of fasting feces.” (pp. 337-45.)

The next section discusses the urine while fasting.

“Complete fasting during which no water is consumed results in lowering in a marked manner the total amounts of urine voided per day. * * * In general, when water is taken during a fast, the volume of urine approaches more nearly that voided by people under normal conditions. Indeed, when moderate amounts of water are consumed, the volume of urine presents as a rule no noticeable abnormalities. * * * In general, then, during the early stages of a fast, with the exception of the first day, the volume of urine is in large measure determined by the quantity of drinking water consumed. If the amount of ingested water is small, the volume of urine may exceed it several times. When the volume of drinking water is over 1000 cc., the volume of urine is usually not far from that of the water consumed. * * * In all of the samples of urine, whether tested by periods or for the whole day, the reaction was acid. The pressure of other work prevented an accurate determination of the degree of acidity. According to Brugsch, however, the acidity, at least in the later stages of a prolonged fast, remains nearly constant from day to day. * * * All the specific gravities observed come well within what would be termed normal limits. * * * In general, the average amount of total

solids during the different experiments is not far from 40 grams per day. * * * The only data regarding the ash elimination during fasting with which we are familiar are the quantities in the urine of J. A. On the last day with food the total ash of urine amounted to 23.0 grams; in the five fasting days, the total ash eliminated was 14.7, 6.7, 5.7, 5.0, and 4.5 grams respectively. * * * In general, the amount (of organic matter eliminated) ranges somewhere between 30 and 40 grams. * * * The proportion of ash in total solids is, as a rule, greatest on the first day and markedly less on the second day. * * * There is a tendency for the nitrogen excretion to approach constancy on the fourth day. * * * In considering the long experiments, it is noteworthy that the carbon elimination is invariably lowest on the first day, and on the remaining days is relatively constant. * * * The excretion of total creatinine, namely, preformed creatinine plus creatinine formed by heating the creatine of the urine with acid, remains singularly constant on all days of the fast, even during the 7-day fast, experiment No. 75. * * * While the quantity of preformed creatinine gradually diminishes as the fast progresses, the amount of creatine, which in normal urines is extremely small, gradually increases, and on the sixth day of the fast, there is excreted 0.585 gram of creatine. * * * The proportion of creatinine has a distinct tendency to diminish as the fast progresses. * * * During even a short period of inanition, the uric acid output may be greatly reduced. * * * The excretion of sulphur increases on the second day. There is an increase on the third day, and a steady diminution on the succeeding days of the fast. * * * There is, as a rule, a tendency for the phosphoric acid to increase for a few days after fasting begins and then subsequently to diminish. * * * The chlorine elimination on the last food day is invariably larger and on the first fasting day there is usually a marked diminution in the amount. * * *

(pp. 345-419.)

If we look over the above summary of results, I think we are at once struck by one important fact, viz., that there is a

constant tendency, on the part of the organism, to eliminate all inorganic and useless organic material from the system as rapidly as possible, the rise in the curves during the first few days being due to this very fact that the organism is attempting as rapid elimination as possible. The therapeutic value of this—and hence of the fasting cure—should be very apparent. But I return to the report.

The next long section is devoted to the "Water Output," and from it I quote a few salient points, summarizing the whole:

"Large amounts of water are excreted in the urine during fasting. * * * As the fast progresses, the average amount of water of respiration and perspiration per twenty-four hours gradually diminishes, but for the last three days of fast, * * * the amount is nearly constant. * * * In general, as the fast progresses, there is a diminution in the amount of water vaporized. * * * The decrease * * * is quite regular after the second day, although the difference between the second and third days is rather greater than that between the third and fourth. * * * On the average, about 44 per cent. of the water vaporized from the body of a resting man during fasting is from the lungs. * * * Considerable variations occur in the amount of carbon dioxide produced on the different fasting days of these experiments. As the fast progresses, the amounts eliminated generally become less and less. * * * If the longer experiments of S. A. B. be examined more specifically, it will be found that the carbon dioxide elimination decreased regularly in all cases as the fast progressed. * * *"

(pp. 420-46.)

I have now given a summary of the more essential results obtained from Prof. Benedict's investigations. It will be seen that very few decisive results were secured, in spite of the great care exercised, and for the reason that the fasts were not long enough. They were all far too short to enable us to state anything positively, and it would be necessary to instigate and observe far longer fasts than those studied by Prof. Benedict—fasts of 20, 30 or 40 days—and upon diseased and

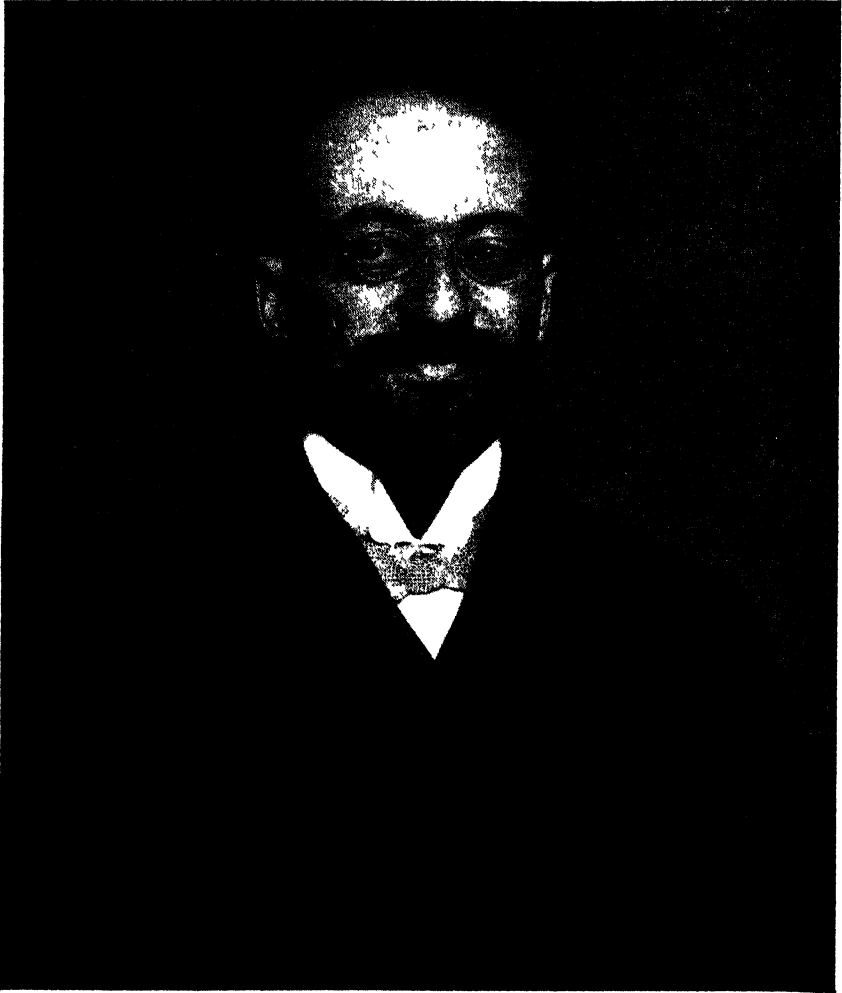
healthy subjects both. The former of these would afford beautiful examples of the therapeutic value of fasting, I have no doubt, while the latter cases would be (after the first few days) cases of *starvation*. There is a radical distinction between these two processes that cannot be too clearly borne in mind; it is fundamental, and is a distinction that must be clearly understood. I have often pointed out this fact, but since it is so ill understood I shall repeat it here: "Fasting commences with the omission of the first meal, and ends with the return of natural hunger; while starvation only begins with the return of natural hunger and terminates in death."

In order to establish any decisive and definite results, then, Prof. Benedict would have to study both these states, and for periods very much longer than those given in his report. Is it not obvious that the body must be thrown into a more or less abnormal and entirely unnatural state, as the result of going without food for one or two days? Would not all the avenues of elimination—all processes whatever in the body—be thrown "out of gear," as it were, and would function more or less abnormally, and that abnormal results would necessarily follow and be studied? In order to arrive at fair and definite conclusion it would be necessary to continue these fasts for a much longer period of time, and study the daily effects throughout that longer period. Fortunately, I had that opportunity, though Prof. Benedict does not seem to have done so. This is a great pity, since it robs his report of the weight it would otherwise have, and makes us think that the greater portion of his work was, after all, useless, since the body would rarely or never be *typical*—so to speak—in the opening days of a fast—as pointed out before. Since all the experiments were conducted on more or less healthy subjects, also, Prof. Benedict had no opportunity to observe the wondrous therapeutic value of fasting. Experiments in the past have been upon animals—almost without exception, and, inasmuch as animals can be considered healthy in the majority of cases, [Were not "healthy" animals almost invariably selec-

ted for the experiments?] the effects would be the results of *starvation*, not of fasting; and, be it observed, our physiologists have paid no attention whatever to those cases where dogs have voluntarily fasted for ten or twenty or more days in order to cure broken bones or internal injuries or kindred ailments! Such cases have never even received a passing mention! It is to be observed that Prof. Benedict does not even mention therapeutic fasting—as I pointed out at the commencement of this review. It is amazing that so much effort can be put into a piece of work of this character; that nearly six hundred pages of facts and figures can be presented, and that so very few results, and results of so inclusive a character, could have been reached. I must contend, again, that these inconclusive results were largely due to the prevalent false notions as to the relation of food to human vitality and bodily heat, and the prevalent lack of knowledge of the theory and physiology of fasting, and only when these views are reconstructed can we hope for definite results in this field of endeavor.

I do not wish it to be understood that I am in any way minimizing Prof. Benedict's work—its value or importance. Far from it; Prof. Benedict is to be complimented upon his insight, fairness and infinite patience with which he conducted his researches, and the tremendous mass of data he has accumulated. His report is almost the first of its kind in the English language, and is a very valuable and interesting one. It is to be hoped that Prof. Benedict's researches will stimulate others to efforts in the same direction, and that they may find that man can and will live for weeks together without food, and without in any way lowering his vitality and general bodily health so long as starvation is prevented. This is a fact of unparalleled importance, and it is to be hoped that the present report will at least have the effect of turning men's minds in this direction, and enabling them to see that "man does not live by bread alone," but by other and far subtler and finer principles of which we at present know little or nothing.

RECENT INVESTIGATIONS.—It was not long after this Report was published, however, that Prof. Benedict had an op-



Agostino Levanzin, B. A., Ph. D., a few weeks after his 31-day fast at the Carnegie Institute.

portunity to study a fast of much greater length—one of thirty-one days—undertaken voluntarily by Prof. Agostino Levanzin, of Malta—who came to America especially to undertake the fast, and be studied by Prof. Benedict. An account of this remarkable fast is given by Prof. Levanzin, in his own words, in *Physical Culture*, and is in part as follows:

I have always deplored the failure of “scientific” authorities on fasting and nutrition to seriously consider the writings

of Bernarr Macfadden, Upton Sinclair, Hereward Carrington, Dr. Linda Burfield Hazzard, Haskel, Eales, Purinton, and many others. So much have I been impressed by this state of affairs that I became desirous of remedying this condition by undergoing a thoroughly supervised fast in a recognized scientific institution, and thus placing upon a sound and positive physiological basis the fasting cure.

I discussed this particular aspect of fasting with Dr. Luigi Luciani, Professor of Physiology in the University of Rome and Senator of the Reign of Italy. He is considered as the greatest authority in Europe on fasting, having studied in 1889 a long fast of thirty days, undergone by Succi, and the report of which has been translated in German and looked into as the standard text-book of the metabolism (changes of the body) during inanition. He informed me that the best man for that work was Dr. Francis Gano Benedict, because he is the Director of the most up-to-date and fully equipped laboratory in the world at the Carnegie Institute at Roxbury, Mass. I knew that Dr. Benedict had published a great book about the "Metabolism of Inanition." I got it and read it several times over, but I always attached very little importance to it, because the deductions in it have been derived from fasts of very short duration; and the longest one of only seven days was performed by a hypochondriac, who, according to Tucek, being an abnormal, could not give normal physiological results. Also, the first days of a fast are generally the most abnormal ones. So that great book, on which the Carnegie Institution has squandered six thousand dollars, is not worth the paper on which it was printed.

I learned that Dr. Benedict was seeking an intelligent, normal individual to thoroughly test by means of a long fast his conclusions on fasting—evidently to prove that a long fast was not only an absurdity, but that it was detrimental to health as, according to his ideas, the energy of the body machine was in proportion to the amount of food ingested and consumed as fuel.

So I offered myself, without any pecuniary remuneration

(the traveling expenses, some four hundred dollars, to Malta, five thousand miles, having been paid), and Dr. Benedict was very glad to concentrate upon me, as a subject, all the forces of the wonderful Carnegie laboratory, unique of its kind in the whole world.

I arrived in Boston on the tenth of April, 1912. I was a bit shattered-down by the rough sea during my trip on the *Franconia* but otherwise in good health. The enthusiasm for the idea that I was going to lay down the scientific foundations of the fasting cure doubled my energies, and so when, on the first night, Dr. Benedict invited me to enter into the coffin-calorimeter, although it looked so ghastly and exciting, I did it without reluctance.

A calorimeter is an appliance for measuring the amount of heat discharged by the body during a fixed period of time. At the Carnegie Laboratory they have several of them. They have one in the form of a large box, called the Atwater-Benedict, in which one can ride on an ergometer (a fixed bicycle) to have the heat of his body measured during work. They have smaller ones for animals and babies. But the one in which I passed thirty-eight whole nights of twelve hours each, is unique in the whole world, and that is the great reason why my experiment could not be conducted in any other laboratory in the world. It is not more than seven feet long, two wide and one and one-half in height; so that I could only be kept in it in a recumbent position on an air mattress, on a stretcher that lay on springs that were connected with a contrivance that marked, at the outside, the slightest movement that I happened to do while in the calorimeter. When the glass door is screwed up and hermetically sealed by melted beeswax you feel the grim sensation of being buried alive.

But when one gets accustomed to it and it is managed by expert hands, one sleeps in it very comfortably and feels as if sleeping in the berth of a ship. When it is not watched properly fumes of sulphuric acid are developed that irritate your throat, eyes and nostrils and stifle you. This happened to me several times as the care of the calorimeter was left in the

hands of youngsters, who preferred joking, singing and skylarking to doing their duty, the importance of which they could not understand.

When I started the fast, on the 13th of April, I weighed less than two pounds over 132 pounds, normal weight, according to the Yale University measurements, my height being five feet six and a half inches. This is an important point in every fast. The professional fasters generally overeat before they start the fast and so accumulate a good storage of adipose tissue on which they can live for the first few weeks of the fast. If the adipose tissue is very abundant, say thirty pounds, they can easily undergo a fast of thirty or more days without consuming one cellule of the essential tissues of their bodies. This important fact has been overlooked by all those scientists who have experimented on fasting men, and so the greater part of the results obtained till now are erroneous, as they are the physiological data of the destruction of the adipose tissue only and not of the whole body.

I tried to avoid this mistake by starting my fast from the normal body-weight, so that all the results obtained are of the destruction of all the different and essential tissues of the body and not of the degenerated and superfluous part only. Dr. Benedict, although reputed all the world over as the greatest authority on human metabolism, could not understand this when I wrote to him stating that I intended to start my fast *from my normal weight*; and he answered that he did not find any difference between starting the fast from 132 or 200 pounds.

The length of a fast is of no importance if that fast has not been started from the normal body-weight. It is more important a feat to start a fast from 140 pounds for thirty days, than one of one hundred days from 300 pounds of body-weight.

I am of opinion that man can lose sixty per cent. of his *normal* body-weight without any risk of death or damaging of his health; and I hope to establish this fact scientifically in my next experiment-fast, that I hope shall take place here in America within a few months more. The greater part of the

normal body-weight is also a storage of food for the brain to be used up in cases of necessity, and the bones act as the sustaining frame to keep up the necessary tissues that form up the different organs that subserve the volitions of the brain, which is the absolute master. This explains why in starvation deaths nearly all the other organs are consumed while the nervous tissues remain intact.

Many have a great reluctance to undergo a fast because they imagine that they are going to prove at the start those torturing pangs that you find described in many books. I never felt hungry on the first days of my fasts, but only a slight upsetting at the usual meal hours. At the start of this fast I was happy that I was going to avoid food for a month or more; and during the whole course of my fast, I not only did not feel any desire for food at all, but banished the thought I ever had indulged in any eating habit. At the start of a fast you suffer mentally if you concentrate yourself thinking about your privation from accustomed pleasures, but if you try to find a diversion at that hour, and drink a glass of water, and do not worry about it there ought to be no discomfort at all.

If you are undergoing the fast for a curative purpose, then I recommend you to drink water as much as you can because that carries along with it many impurities from the blood and so the cure is greatly helped. In the same case I recommend frequent enemas and Turkish baths. But generally you desire very limited quantities of water. I used to take only nine hundred cubic centimeters (approximately one quart) daily, and even that was too much for me, but I was compelled to drink that quantity each day for experimental purposes. My water was *distilled* and cold. Never has a fast till now been conducted on distilled water only; its taste is very disagreeable. I persisted in its use to insure more exact results. Professional fasters drink mineral waters during their fasts.

During my whole fast I had no defecations. I had a bowel movement just before I started the fast and the next was thirty-two days afterward, when I broke it. I did not

try to provoke any, as I did not wish to spoil the scientific results; and so the bad, bitter and upsetting taste of my mouth was very trying. One undergoing a curative fast should clean the bowels as much as possible by frequent tepid enemas or by using fruit-juices. The first movement that follows the breaking of a fast generally presents some inconveniences, among which are meteorism (gas in the bowels) and colic. The meteorism is persistent in those who have not been using the enema. A plug of hard feces is formed in the rectum, and another one at the duodenum (upper part of the bowels) is formed by the newly ingested food. The intestines are empty except for air. When the upper plug pushes down rumblings occur in the bowels. When this air is compressed more the abdomen inflates (meteorism). When it is more tightly compressed colic starts, and continues to increase till the rectal plug is excreted. Do avoid this, because fasting must be a pleasure-trip through health land and not the source of any pain or unhappy feelings. Anticipate it by rectal enemas to dissolve out the hard plug, and then as the upper plug of the newly ingested food is coming down, a few hours' seclusion from your friends and parents will be the only sacrifice taxed upon you.

Many people think that during a long fast you have to sit down on a Morris chair reading newspapers or dozing because you have not sufficient strength for doing any work at all. If you weigh two hundred pounds and your normal weight should be one hundred and thirty-two you can fast for sixty days and for each day you increase your strength, because you are coming back to your normal point. I started this fast from my normal weight, I have gone through thirty-two days of continuous scientific hardships and tortures, but I never felt that I was losing any strength and there are the dynamometric tests to show it.

On the last day I could press up to one hundred and twenty pounds without any difficulty with my left hand and I never do any regular exercises except walking. I could go up and down a steep flight of steps to my balcony without support or

shaking in the knees. I never lay down except during experiments.

I used to pass the few spare hours that were at my disposal writing long letters and busying myself actively; on the evening of the last day I was dancing in the laboratory and laughing. In the afternoon the elite of the medical and scientific men of Harvard University and of the medical colleges came to see me. I stood up for nearly two hours and for the whole time.

I explained to them the impressions of my fast, compared them with those of my precedent fasts and answered many questions with my spirits up and without feeling the least exhaustion. Those that feel any lack of strength during a fast are to be classed in the same category with those who feel hungry. They are nervous, and very impressionable people, and their sufferings are only the baneful effect of their too vivid imagination.

If you suggest to yourself that you are strong and that you can walk two miles on the thirtieth day of your fast, believe me, you can do it without great difficulty, but if you fix in your weak mind that you are going to faint and worry and persist to worry about it, be sure that not a very long time will elapse before you faint really, a victim of your wrong auto-suggestions.

During my last fast of forty days in Malta I used to do my hard professional work from 9 to 12 A. M.; from 5 to 9 A. M., I used to prepare articles for my weekly review "Nahla," and from 12 to 7 P. M., again my work for the paper and correspondence. At 7 P. M., a long walk to 9 P. M., and I have never felt any diminution of strength. On the fortieth day among fifteen strong men only two out-pressed me on the dynamometer.

Mrs. Levanzin, during her record fast of thirty-three days, continued to do all her domestic duties and at that time she had no servant. She used also to find time for her walk with me or with the daughters and also to write articles for my paper on hygiene and domestic economy. Succi used on the last days

of his fasts ride on horseback or ascend the Eiffel Tower of Paris, running up the tremendous staircase that tires you, as it did me, simply by descending it. This shows evidently that the loss of strength is only an effect of the imagination; and so my friend Carrington's theory of vitality shall be (by what resulted during my last fast) if not confirmed, at least put in a higher place for consideration. But if physical strength is not lost during a fast, the mental power and clarity are extraordinarily increased. Memory develops itself in a wonderful way, imagination is at its best.

At the outset of my fast, my exact weight was a shade over $133\frac{1}{2}$ pounds (60.6 kilograms). At the conclusion of the thirty-one days of my fast, I weighed barely $104\frac{1}{2}$ pounds (47.4 kilograms), a total loss of twenty-nine pounds during the fast. Throughout the fast, tests were taken of my pulse rate, blood pressure, respiration rate, respiration volume, blood examination, anthropometrical measurements, urine analysis, and growth of hair, not to mention innumerable other observations of my mental and physical condition from day to day.

I cannot exactly speak about my condition at the close of my fast, because I had to break it against my will and when Nature was not ready for it. I had agreed with Dr. Benedict to undergo a fast of thirty days on water and one of three days on carbohydrates only. When the thirtieth day arrived I was in splendid condition, I had not the least desire for food and could not have it because my tongue was still heavily coated. I was still in possession of my full energies and ambitions and my mental faculties were getting better and better day by day. I asked Dr. Benedict to let me protract the fast for at least forty days. He objected as being very expensive and fatiguing to his men. After many entreaties, he agreed to let me fast for a day more—thirty-one—to beat the record of the longest *scientific* fast ever done. If the fast were continued to its natural limit I am sure that I would have felt very much better. I have experienced that in the precedent long fast of forty days.

I have put under experiment nearly all the systems for breaking a fast. The *how* is as dangerous as the *when*. To mine I have added the experience of my wife, my daughters and of many of my friends. After a mature and long meditated study of physiological principles tested by practical methods I think that I have arrived at the right solution. I had the intention of giving my system a thorough test during the breaking of this last fast, but I could not do it as I had to follow unwillingly somebody else's inflexible will.

I break my fasts on acids and carbohydrates followed immediately by proteid food. The ease and rapidity with which tissues are rebuilt, without any untoward accidents, is really astounding. Dr. Goodall, who was in charge of me during the fast from the medical point of view, insisted on having my fast broken on "clam broth" and "beef tea!!!" And because I told him that these would kill me he and Dr. Benedict gave up and put all the responsibility on my shoulders. I took it and broke the fast successfully without any inconvenience although it was afterward spoiled at the hospital.

CHAPTER II.

THE SCIENCE OF HYDROTHERAPY.

THE science of hydrotherapy is that of healing by the use of water. Physcultopathy is different from most other systems of healing in that it is inclusive of all natural methods. By natural methods, I mean those that fully recognize that it is not the physician or his drugs that heal disease, but it is the power possessed by the body, which is self-regulative, self-curative, self-adjustive, if given the opportunity. From the moment of birth until that of death the body, under certain simple conditions, maintains itself, dependent only upon that Great Fount of Nature which is the prime source of all life and power. The diseased body is the body that is out of harmony with natural conditions. Water, by the ease of its application in a variety of ways, so readily helps forward the simple and natural healing processes of the body that it is recognized as one of the most powerful agents in the hands of those who seek to supplant weakness and disease with strength and radiant health.

I have made it clear, however, in other parts of this work that I do not rely solely upon any one method of healing. I avail myself of all natural processes, such as mechanical Physcultopathy—which means rational development and maintenance by easy exercises of the whole muscular system, voluntary and involuntary; massage; rational diet; abstinence from harmful beverages; the use of proper and appropriate dress; and the utilization of the natural forces of healing such as fresh air, pure water, sunlight, and the electricity of the earth.

For many centuries hot, cold and tepid water, together with hot and cold mud baths, have been used by all people, both aboriginal and civilized, in the cure of disease and the maintenance of health. It is only within the last generation or so, however, that hydrotherapy has advanced to the dignity

of a science. That it is now recognized as such, there can be no question. And the various effects of water can be better prognosticated than almost any other form of helping forward the processes of the body.

It will be impossible in this work to enter into any disquisition as to the scientific basis of hydrotherapy. This is thoroughly discussed in elaborate works devoted to the subject. My aim is but to present a few of the fundamental principles and then give illustrative examples of methods of treatment, with specific directions, which can be followed in cases where certain symptoms seem to call for such assistance.

Water possesses three remarkable properties, all of which render it most valuable for healing purposes. These are: 1. Great power in absorbing and communicating heat. 2. Great solvent properties, water being the one universal solvent. 3. The facility with which it may be changed from a liquid to the solid and gaseous forms.

It is well known that water absorbs more heat than any other body, hence it is taken as the standard of specific heat. Water both absorbs and communicates heat with great readiness. It can be used, therefore, for communicating heat to the body or abstracting it.

Being a universal solvent, its internal application materially aids in the elimination of uric and oxalic acids and other abnormal products which, under certain unhealthy conditions, rapidly accumulate in the body to its great injury. Elsewhere we have shown its advantages in the use of the enema.

While water is generally applied to the body in the liquid state, there are times when the application of steam, or rather, steam condensed to mist or vapor, is of great advantage, while at other times, water solidified by the effect of cold into ice is of equally beneficial effect.

It must never be forgotten, however, that though water is a most simple and natural remedy, it is one of the most powerful agents known to mankind. Hence it must be used with caution and wise discrimination, due observations being taken

of the resistant power of the patient. For instance, a remedy that would be most effective in aiding the body to eliminate a serious catarrhal condition from which a thick-set robust and generally vigorous man might be suffering, would possibly mean death if applied to the frail, anemic person of low vitality if suffering from the same disorder. This fact will explain the disrepute into which hydrotherapy has been brought by its ill-advised and ignorant followers. Some person having been cured from serious ailment by some particular treatment has enthusiastically urged the same remedy, applied in the same fashion, to some friend to whom it was totally inapplicable. The resultant disaster has been attributed to the inadequacy of hydrotherapy rather than to the ignorance of its advocate.

In addition to its use for communicating and abstracting heat from the body, water may be used by friction or percussion on the skin, administered either by the hands of an attendant or mechanically. These cutaneous methods do not rest upon any effect produced upon the skin alone. They depend for their efficiency upon the fact that by means of an intricate system of nerve centers and blood vessels, the outer surface is connected most directly with the interior of the body. Thereby two effects are produced by the water upon the skin and through it upon the muscles, nerves and blood vessels of the interior of the body. These are known as reflex and mechanical effects. If by the application of heat, cold, massage or percussion, contraction of the blood vessels of the skin occurs, similar contraction will take place within the interior of the body. This is the reflex effect. But on the other hand, the mechanical effect is of an entirely different character. If the contraction of the blood vessels of the surface is made to take place, this contraction naturally forces a rush of blood to the interior vessels. The result is that there seems to be two opposing effects, that of the reflex action which contracts the blood vessels and the mechanical action which fills the blood vessels of the interior with fluid. It can readily be seen, therefore, that the real effect of the application to the skin can be

judged properly only when both reflex and mechanical effects are taken into consideration.

Among the chief effects desired by the application of water, however, are the abstraction of heat in cases of fever or the communication of heat in cases of low vitality.

When cold water is first applied to the body, its primary effect is to lessen the activity of that part of the body which it affects. That this depressing effect is generally understood is seen from the universal habit of placing foods in a cool cellar or ice chest. This simply arrests, by the effect of cold, the activity of the bacterial organisms in the food. If the cold application is long continued, the vital depression also continues and remains for some time after the withdrawal of the application. But, if the vitality of the patient be reasonably good, the secondary effect is that the parts affected return to their normal condition, nay indeed, to greater activity than the normal, and this is the explanation of the so-called reaction or tonic effects of cold water upon those of good resistant vitality. So that by the use of cold water upon the skin we have the apparent anomaly of producing a stimulation by that which primarily depresses the activity of the skin, thus clearly showing that it is not so much the actual effect of the cold that one seeks to produce as the *after* effects induced or provoked by the cold sensations.

There are many effects of cold water which it is well to understand. The primary effect of cold water on the skin is that, by the contraction of the small blood vessels, it produces pallor and coldness. But as soon as the cold application is withdrawn, the contracted blood vessels expand and the pallor or blueness gives place to redness. Percussion or slapping and friction have much the same effect as cold water, giving first the contraction of the blood vessels and later their expansion.

The first effect of cold on the skin is to decrease or suspend the action of perspiration. This action is resumed often with marked increase, as soon as reaction occurs. Another primary effect of cold upon the skin is to eliminate heat while

the application continues. But when the reaction occurs there is an accelerated action of blood through the vessels of the skin and while this seems to increase the heat, the effect in reality is to produce further cooling of the body, owing to the further radiation of heat that takes place when the interior heat is brought to the surface.

The sensation of feeling is also variously affected by the application of cold water to the skin in different ways. For instance, one feels the cold much more if he slowly immerses his body in water than if he suddenly plunges into it. Fine spray feels cooler than a heavy percussion douche, because the douche stuns the skin by its force and lessens the sensibility.

The application of cold water to the skin slows the circulation and retards the heart's action. Yet everybody is familiar with what seems to be the contrary fact, namely: That the sudden application of cold water causes a shock which momentarily increases the heart's action. It is when the cold is long continued that the heart's action is reduced. If a very cold compress or an ice bag is applied over the heart for several hours, it diminishes the activity of the organ and consequently reduces the speed of the circulation of the blood throughout the body, whereas, on the other hand, if a tonic effect is required for the heart a cold application lasting for only a few moments will produce that effect.

The use of the cool enema and the drinking of an abundant supply of cool water is the most efficient means of combating a fever.

There is a similar effect upon the organs of respiration resultant upon the application of cold water. While a quick cold application produces increased respiration, the respiratory movements are decidedly slowed when the body is immersed for a little time in a full cold bath.

If increased respiration is required, it can be produced by the cold douche or spray being applied to the chest. In cases of asthma, however, such treatment will generally produce a paroxysm of "wheeziness," sometimes bordering upon a sense

of suffocation. This unpleasant symptom disappears when the reaction sets in.

Every person is familiar with the effect of cold water upon the muscles. If one's fingers are allowed to remain in cold water for any length of time, they become stiff and clumsy. Yet, when cold is applied swiftly and for a short time only the effect upon the muscles is as upon the skin and respiration, namely: It augments their activity. In cases of great muscular fatigue, a cold bath of two or three seconds immediately preceded by a short hot bath is a wonderful restorative, but it should also be followed by vigorous rubbing, quick dressing and exercise sufficient to assure reaction.

The effect of cold water applied to the skin of the feet or lower abdomen will often excite the voluntary muscles of the bowels and bladder, thus stimulating uric and fecal evacuation.

Recent experiments have shown that the continued application of cold to the chief trunk of a nerve may greatly diminish or entirely abolish its functions. In other words, the prolonged application of cold diminishes nervous and mental activity to a high degree. This is one reason why the application of a cold compress to the base of the brain will often reduce mental activity and thus induce sleep. On the other hand if the application of cold is of very slight duration, an immediate reaction, owing to the awakened resistance, may produce the very opposite effect. It has been found, too, that so close a relationship exists between the blood and lymph circulation of the brain and the abdomen that a moist bandage placed upon the latter will generally withdraw the blood from the brain, at the same time abundantly filling the lymph membranes, thus supplying the conditions required for normal sleep.

The reflex effects of cold applications have been thoroughly studied so that it is now well known that applications of hot or cold water made to certain parts of the body definitely affect certain interior organs according to whether the applications are hot or cold, short or long. For instance, the popu-

lar practice of holding a cold key to the spine to check nose-bleed is the recognition of a fact, that science now demonstrates, that a prolonged application of cold to the upper spinal region relieves congestion of the nasal mucous membrane. Many a case of hysteria caused in women by uterine troubles may be relieved by application of cold water to the breasts, abdomen, hands or feet, as it is found that these cold applications produce contraction of the involuntary muscles of the abdominal viscera. It can well be seen that a full knowledge of these reflex actions upon the voluntary and involuntary muscles is of the greatest possible service to any one seeking to understand and practice the healing art. Many cases of suppression of urine which might have developed into something serious have been relieved by a cold foot bath of a few moments' duration.

Cold applications also have a decided effect in increasing the number of red and white corpuscles. This is due to the contraction of the blood vessels of the viscera, thus driving the corpuscles into the general circulation.

It is also assured that the effect of cold is to increase the powers of absorption by the gastric and intestinal mucous membranes, thus aiding in the process of nutritive assimilation.

Cold applications have also been demonstrated to produce wonderful effects in increasing the secretions and furthering of change of tissue within the body. The same effects are produced upon the organs of excretion.

I have already referred to the effect of cold applications upon temperature, and the laws by which the temperature of the body may be increased or decreased are now well understood.

One great student and practitioner of hydrotherapy claims that the proper application of cold to the surface of the body most probably has a wonderful effect in influencing the storage and discharge of nervous energy. Our own experience in thousands of cases confirms this and Physcultopathy definitely applies this principle in its hydriatic treatment of the spine. This subject is fully discussed in our first volume.

The scientific followers of hydrotherapy must thoroughly study and understand the phenomena of reaction, because upon the wise understanding of the laws governing these phenomena much of the treatment must depend. They must understand how to produce circulatory action and reaction and thermic action and reaction. There are many cases in which it is essential to prohibit reaction, either partially or wholly, hence the laws must be known.

There are many conditions which the practitioner of hydrotherapy must take into consideration in regard to this matter of reaction. Not only are there certain conditions of disease which operate against healthful reaction, but care must be exercised in all cases of low vitality, of old age, infancy, temporary exhaustion or nervous exhaustion, obesity, the possibility of impending chill, and the other similar conditions.

The application of heat to the body is as important as the application of cold, and the laws by which heat operates should be thoroughly understood. Heat may be applied to the body in several ways, by means of hot water, hot fomentations, steam vapor, hot air, the direct rays of the sun, or radiation from an electric incandescent body. As with cold, so the effects produced by the application of heat depends, 1, on its mode of application; 2, its temperature; 3, its duration; 4, the condition of the subject.

The fact that the mucous membranes can endure water ten or fifteen degrees hotter than the skin is evidenced by the fact that people can be found drinking hot liquids that would scald the skin. In the Russian or vapor bath, a temperature up to 120 is generally enjoyed and some people can take it as high as 145 degrees without discomfort. In the case of the hot dry air of the Turkish bath, 140 to 180 Fahrenheit is common and in special cases it is often raised to 220 or 250 degrees without injury. In the salt works on the Colorado Desert, in Southern California, Indians and Mexicans used to work continuously during the hot summer months when special thermometers would register as high as 165 and 170 degrees,

and yet sunstroke was unknown and few of them experienced any discomfort.

While water at about 99 to 101 degrees Fahrenheit applied to the skin relaxes the surface blood vessels, applications of 104 and higher causes contraction. Those who have been scalded tell us that intense heat causes shivering, exactly the same as cold, but the general effect of hot water at moderate heat is to produce a dilation of the capillary vessels and consequent reddening of the surface of the skin.

The effect of such hot applications is not only to increase the dilation of the arteries but also of the small veins and lymph channels. The result is an increased amount of perspiration and a stimulant to respiration by means of the skin. These same effects are produced even in a larger degree by the electric light bath and the sun bath.

It is important to remember, however, that prolonged and repeated perspiration induced by artificial means weakens the skin and lessens its reactive power. This is the reason why hot applications are generally followed by cold ones, the cold restoring the tone and reactive power of the skin.

While the application of heat to the skin seems to increase the heat of the body, in reality, it increases the loss of bodily heat, 1. By dilating the surface vessels and thus increasing the area of the blood exposed to the cooling influences outside the body. 2. By increasing the rate of the blood-current in the skin, thus bringing more blood into contact with the outside cooling influences. 3. By increasing the amount of perspiration, through increased activity of the sweat glands. 4. By increasing the conductive power of the skin, thereby radiating more heat.

One of the chief values of the application of hot water to the skin is that it prepares the body for the application of cold. The reactive power is largely increased if this preliminary heating has taken place and in cases of fatigue, rheumatism, neuralgia, or anemic and enfeebled persons, this preliminary heating of the skin is of the greatest importance.

Heat materially affects the circulation of the blood. The

first effect of a full hot bath is to increase the activity of the heart. This renders it unwise to administer a hot bath to those of plethoric habit, those who are liable to apoplexy, or those who have symptoms of incipient arterio-sclerosis.

Generally applications of moist heat increase the facility of the respiratory movements, though after a hot bath there is a temporarily diminished rate and depth of respiration. Hot water diminishes muscular excitability and capacity for muscular work. It also lessens muscular irritability. At the same time experience has demonstrated for scores of years that very short hot applications are the best possible means of recovering persons who are prostrated with prolonged or violent exercise. An eminent English Army surgeon over a century ago habitually used the hot enema on soldiers who had fallen by the way from utter exhaustion. Where the vitality is seriously low, the body does not have the power of reaction from a cold application. In such cases a *short* hot application produces the desired result. It is made much more effective and permanent in its result if it is immediately followed by a short, sharp cold application, as for instance, a jet of cold water down the spine for a couple of seconds, the cold mitten friction rub or a cold wet sheet applied with vigorous rubbing for two minutes or so.

In nearly all cases where the hot bath has a weakening effect, this may be neutralized by a sharp, quick application of a cold douche, rub or pack as here suggested, and all hydro-therapeutic practitioners should bear this in mind.

There are cases where very hot applications have most stimulating effects upon the nervous and muscular systems. In cases of enlargement of the prostate gland, very hot rectal irrigation is found of the greatest benefit; and a large hot high enema will relieve constipation by its stimulating effect upon the nerves and muscles of the upper intestines.

Hot water may be so used as to excite or depress the nervous system. Baths of a high temperature, 100 degrees Fahrenheit and upward should not be too long, or they will produce exciting effects, sometimes causing nervousness,

headache, dizziness, nausea, etc., while if the heat is very long continued, nervous exhaustion may appear. On the other hand, the prolonged neutral bath—that is of water slightly below the temperature of the body (92 to 95 F.)—if continued from half an hour to an hour and a half, produces such complete isolation of the nerve centers as to act as a delightful sedative. It must be remembered that the brain is constantly receiving impressions from the nerves located in large numbers in every part of the cutaneous surface. Where one is in a sensitive condition each of these impressions increases the excitement which it is desired to remove. Not only does the neutral bath have the effect of directly quieting the nervous and muscular systems, but by completely isolating the whole surface of the body from these outside, exciting influences, it materially helps in bringing about the desired soothing results.

The reflex effects of local applications of hot water are as well understood as those of cold water, and they should be thoroughly known and mastered by the hydrotherapeutic student.

Hot applications are known to have a decidedly stimulating effect in increasing the healthy action of the stomach, liver and other digestive organs. While short applications of heat to the body diminish heat production, that very fact of heat elimination generally produces a reaction which means greater heat production. Prolonged applications of hot water, locally or to the whole body, will materially increase the temperature of the body.

While the reaction following the use of cold water is generally to be preferred, there are times when reactions from hot applications are of greater benefit. One of the most stimulating effects in therapeutical applications is found in alternate hot and cold applications to the skin. This is a most efficient means of stimulating nutritive assimilation, etc., without causing any serious disturbances of the heat balance of the body.

Vital reactions and organic changes of great importance

are thus seen to depend upon the practical application of the principles of hydrotherapy.

These effects may be increased by a mechanical stimulation such as friction and percussion. Friction may be light, energetic or very vigorous and each method has its specific value in certain cases. On the other hand percussion has its specific value. It has been found that where an unbroken cold stream is projected upon the body with strong pressure, the immediate effect is to contract the blood vessels so that the blood is forced out. Immediately the stream and pressure are removed, the vessels dilate again and thus by the constant moving of the stream, an alternate contraction and dilation of the muscles of the blood vessels is produced. According to the greater or lesser power with which this douche is applied and its temperature are its effects gauged. In the hands of an efficient practitioner both friction and the hot and cold douche are of the highest value.

There are a few general principles that should be well understood by those who use the methods of hydrotherapy. The first and fundamental principle is that which has been laid down throughout this series of volumes, namely, that it is the patient and not the symptoms of his disease that is to be treated. In the main, all disease is one, that is, impurity of the blood, the various manifestations or symptoms being merely the evidences of personal or local idiosyncrasies. In all treatments followed at our institutions, I seek first of all to understand the patient and the causes of his disease. And then, paying little attention to whatever symptoms may manifest themselves, we devote all our energies to aiding the body in its own natural way to eliminate the disease.

Where wrong habits of life have caused the difficulty, we endeavor to instruct the patient and show him how his disease was caused, and therefore how it may be cured, namely, by a change in his habits of life and by aiding the body in its self-curative powers.

Before we begin this treatment, we first examine the patient to discover the state of his heart, nervous system,

liver, kidneys, etc., as well as to determine his reactive power. Where a patient is feeble and with limited vitality, different remedies must be prescribed from those which are given to those of vigorous body and strong reactive power, or at least modified applications of the same forms of treatment.

After short cold applications, we watch for the bright red color of the skin which indicates normal reaction. When this does not appear in less time than a minute under vigorous friction, we generally precede the cold application by some general hot application, which, continued from three to five minutes, prepares the body for the cold application and a perfect reaction.

As a general principle, the lower the temperature of the water, the shorter should be the application. For very cold applications, one to five seconds is enough. Tepid, warm or hot douches may be more prolonged, the duration lasting even as high as fifteen minutes. When employed to reduce fever cool applications may be prolonged to fifteen or twenty minutes. The neutral bath, as already explained, may be so administered that there is no reaction and for sedative effects from thirty minutes to two hours is permissible. We aim to secure reaction with the water at as low a temperature as possible for we have found that short cold applications, frequently repeated, produce the best and most durable effects. While we often follow the hot percussion douche with a long cold application of a similar character, we shorten the time if we find the effect too exciting by too strong a reaction. Sometimes the effect is sedative or exhausting instead of bracing. And then either the temperature is increased or the time of the application is reduced. In all cases of nervous exhaustion or anemia cold applications are of very short duration.

A most careful study of the reactive power of the patient should be made after each application, so that the progress of the curative process or the reverse may be determined. Where the patient does not react well to low temperatures the

effect desired may often be produced by strong friction or increased pressure of the douche.

While bathing weak patients one should be careful not to expose their bodies for too long a period to air when in a moist condition, as radiation of heat rapidly takes place from the moist body. This same fact also renders it imperative that the patient's body shall be thoroughly dried after each bath if recuperative powers are lacking.

Wherever possible, we require our patients to exercise prior to the taking of the bath for the reason that a slight perspiration before the bath favors the tonic effect of the application and reinforces it to considerable extent. Where there is a weakness of body, as in the case of nervous exhaustion or in case of anemia, one must guard carefully against profuse perspiration and in every case the bath must be taken immediately after the termination of the exercise and before there has been any opportunity for cooling of the skin by evaporation. But the radiation of heat from a moist body must always be avoided when vitality is low or where one is seeking rapidly to build up vigorous health.

In our gymnasium we provide for the best forms of indoor exercise by gymnastics, dumb-bells, club swinging, weight pulling, etc., but where outdoor exercise can be taken, such as vigorous walking, bicycle riding, or any other work that will exercise the muscles sufficient to produce slight perspiration it is preferable to indoor exercise. Where the taking of exercise is inadvisable, patients can be prepared for the bath by massage, friction, the application of heat or various mechanical Physcultopathic treatments which are fully explained elsewhere. Of equal importance is exercise after the bath if reaction is not quickly noticed. Where there is incomplete reaction chills often result which produce serious disturbances. A moderate walk of from half an hour to an hour's duration, or a few minutes' exercise is sometimes beneficial if the patient has the strength; otherwise, should he not recuperate promptly, he should be wrapped up in blankets or made warm and comfortable as quickly as possible in some

convenient manner. It must always be understood, however, that where this is necessary, the tonic effects of the baths are materially lessened. The broad general principle to be followed after a bath is to see that reaction is as complete as possible without any artificial heat. Further reference to this important matter is made in a special discussion of *Recuperation*.

Following this general presentation of some of the fundamental principles of Hydrotherapy, the various special topics are taken up in alphabetical order, for the greater convenience of the reader. In all cases, however, the foregoing principles should be very carefully studied. The student should also make it a special point to read the sections of this chapter devoted to *Internal Baths*, *Air Baths*, *Sun Baths* and *Dry Friction Baths*, which, being allied remedies of great potency and value, are properly included here.

ABDOMINAL PACK.—See *Girdle*.

ADVANTAGES OF BATHING IN HEALTH.—When one finds the practice of bathing one of the greatest comforts and joys of life, as it should be, then he may be sure that it is just as beneficial as it is pleasurable. The question as to whether it is harmful or healthful may be decided by this test of its pleasure-giving qualities. Here, as in other matters, we may trust largely to our instincts.

For the particular purposes with which we have to do here, it is unnecessary to enter into any discussion of the history of bathing. It is sufficient to say that it is as old as the human race, as we have good reason for believing. It has invariably been associated with the more civilized, progressive and powerful nations of the world, although it has also been practiced by most races of savages in one way or another, chiefly in the natural form of swimming. We know that bathing was given a prominent place in the lives of the ancients, Athens, Carthage, Corinth, Memphis, Agrigentum and all the seaport cities of Western Asia maintaining free public baths, while Rome was particularly lavish in the provision of luxurious facilities and in their indulgence. There can be no

question that their fondness for bathing was a very great factor in promoting the health and vigor of all these robust nations of the younger world.

Bathing is of value as a health-building agency in two different ways—as a means of cleanliness on the one hand, and on the other as a tonic. The old saying that “Cleanliness is next to godliness” has long been something of a commonplace, but it is nevertheless significant of the great truth that external cleanliness, aside from its value for its own sake, its æsthetic value, has a very great deal to do with the purity of the blood and general internal wholesomeness.

As we have already observed from our study of the structure of the skin, it has, among others, the function of helping to eliminate the wastes of the body through millions of tiny pores. If these pores are active in their work, so much the better for us. If they are interfered with in these labors, so much the worse, for as a result of such interference the impurities of the body will accumulate until they cause disease in some form or other. Without a proper amount of bathing, these pores are likely to become clogged up with grease, dirt and the impurities excreted by the pores themselves.

It is true that in a state of nature and nudity there is no special need of bathing for the sake of cleanliness, because the exposure to the air and the occasional friction to which the skin is subjected will provide well enough for this purpose. The so-called “scarf-skin” consists of innumerable tiny epithelial cells, in the form of infinitesimal scales, constantly forming and pushing to the surface, where, in a deadened and dried condition, they are rubbed off. At least, they are so rubbed off under natural conditions of the exposure of the skin, thus providing for a continuously clean and good condition of the skin. But in the use of clothing we have so seriously impeded this process that bathing becomes a necessity from the standpoint of cleanliness. The savage may bathe for the exhilaration of it, but not because he needs it for the health of his skin.

The amount of bathing necessary for this purpose will

vary according to the individual, his diet and his habits. If his diet is clean and favorable to a perfectly pure condition of the blood, and if his internal condition is wholesome and normal, then there will be no excess of wastes to be eliminated through the skin. On the other hand, if one is a heavy consumer of meats, if he is negligent in the matter of exercise, if his functional organs, and particularly his other depurating organs, are sluggish and inactive, then the importance of eliminating as much as possible through the pores of the skin becomes more than ever insistent. (See *Dry Friction Baths*.)

The influence of exercise upon the internal condition of the body, and also upon the amount of perspiration, is very important in this connection. If one is able to spend two or three hours each day in wholesome and congenial exercise in fresh air, dressed in the conventional "running suit," or other similarly scant apparel, which permits of the contact of the air with the skin, then the body wastes carried out through the pores will to a great extent be taken up by the air through evaporation. In my remarks upon the advantages of muscular exercise, in another place, I have pointed out its influence in cleansing all of the tissues of the body, but just here I would emphasize the importance, yes, the necessity, of bringing about at least a certain normal amount of perspiration daily as a means of preserving health, it being assumed that this perspiration is the natural result of this same physical activity. Though one should be careful in laying hard and fast rules for others, still it may be set down as a general rule that, unless one's life is such as to induce a certain amount of perspiration each day, he cannot maintain a perfectly pure and wholesome condition of the inner man. It is the old story of "the sweat of thy brow!"

If the pores are not properly active in this way, then it means either that the kidneys are overworked, or that waste matter is accumulating somewhere, with the ultimate result of disease. The curative processes of the disease, when it comes, will eliminate this waste, but at the expense of some loss of

vitality and probably with very marked discomfort and inconvenience for the individual. It is ever so much better to keep everything working perfectly and to eliminate all wastes day by day as fast as they are formed, thus avoiding the necessity of calling upon these beneficent though often painful disease processes to accomplish the work spasmodically.

The more imperfect one's health, the more corrupt and impure the condition of his blood, the more important are these various forms of bathing for insuring that cleanliness which makes for the greatest activity of the pores. But aside from this aspect of the subject, the tonic effects of the use of cold water are invaluable for building health and vigor. Not only does it have the most remarkable effect upon the circulation of the blood, thus invigorating and toning up the vital and functional organs, but it has a particularly good effect upon the nervous system as well, through the contact of the cold water with the myriads of nerve end-organs located in the skin. Those who suffer from nervous weaknesses or disorders can often secure results through the use of cold or cool water which they can bring about in no other way.

The daily cold bath, more perhaps than any other one agent, increases the vital resistant power of the skin. By increased cutaneous activity and enlarged circulation of the blood, the body is able to withstand cold to a far greater degree. This means the ability to laugh at coughs, colds, catarrhs, pneumonia and many other ailments which are constant bugbears to those whose skin is not in a vitally resistant condition.

By reflex action this daily stimulus to the skin affects the processes of digestion and assimilation; the necessary secretions are increased in quantity and quality, and the enlarged activity of the circulation strengthens the digestive organs by the conveyance of more and better blood to them.

Every robust child, therefore, should take his daily cold bath, though some experts think that care should be exercised in infancy; that is, until the child has reached the age of seven or eight years. But my experience has been such that if a cold

or cool bath is given quickly and the drying done perfectly, not only is there no injury to even the youngest infant, but a decided benefit. I have known of many cases where infants from the day of their birth have taken cold baths with regularity. But it has been the sudden quick affusion or pouring of a large volume of water, so that the shock did not last more than one or two seconds. Naturally, if the infant is sickly, it will be better to begin with the warmer temperature and slowly reduce it until a better state of health is gained.

For growing boys and girls, especially as the epoch of puberty arrives, the cold bath is beneficial, in that it healthfully stimulates all normal functions and promotes all healthful secretions. By its action, it will largely destroy so-called "growing pains" and at the same time prevent the establishment of nervous conditions that so often become established through want of proper attention at this time.

There are few adults who cannot take the cold bath to advantage, but it must be adapted to the condition of the individual. To immerse the body in a bath tub of cold water is not always either practicable or wise, even for a reasonably vigorous and healthy person, but there are very few who cannot take the cold rub down every morning advantageously. Several suggestive methods for taking the cold bath or its equivalent will be explained a little later on. Men and women whose occupations are sedentary especially need the tonic influence of the cold bath and yet if they are not healthy it is better always to precede the cold bath by a hot bath of three or four minutes' duration.

In the cases of those suffering from Bright's disease, neurasthenia, rheumatism, gout, gravel, it is better to take the cold bath with caution, though its daily use will usually be of the greatest possible benefit. The water should not be too cold so as to give the patient a severe shock. In the case of very feeble persons where the cold bath is advantageous it is far better to apply the water with friction over a small part of the body at a time than to immerse the whole body at once. (See *Cold Baths in Health and How to Take Them.*)

I firmly believe that if the habit of taking the cold bath every morning could be established throughout the land one



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A "home-made" method of securing an affusion to the spine or any other localized part of the body desired. The suspended pail of water is gradually tipped by means of the pulley rope fastened to a hook near the bottom of the pail, thus giving a single column of water instead of the shower or spray shown in other illustrations. Drainage, etc., should be attended to as with showers.

single generation would show such a marked improvement in the health of the nation as to be nothing less than marvelous. It will not be long before every school will be provided with its gymnasium for physical culture exercise, connected with hot and cold shower baths and a swimming tank. These measures we have long advocated as a hygienic necessity and if the race is to progress instead of deteriorate, it is essential that measures of this kind shall be established and done speedily.

THE AFFUSION OR POURING BATH.—Where the horizontal douche is not available, practically the same effect can be produced by having a sufficiency of water and pouring it upon

the body as indicated. Necessarily the pressure effect upon the skin cannot be obtained in this manner, still the pouring bath can often be used to good effect where the other appliances are not available. One may sometimes arrange to secure a certain degree of pressure by pouring from a sufficient height, though this is more or less difficult when a local application is required. In this form of bath, however, every preparation must be made before the patient's body is exposed to the air, so there is no delay while the bath continues.

It should be borne in mind that discomfort or even injury sometimes results from the arresting of a bath halfway because of carelessness in making abundant preparation beforehand.

AIR BATHS. [See also *Respiratory System*, Chapter X, Volume I.]—In a state of natural living the skin of the body is exposed to the air, so that it is kept in perfect condition. In civilized communities, as well as necessarily, in very



Photo by Underwood and Underwood

Hardy physical culturists, enjoying air baths on the snow and ice in zero weather. This is not to be recommended for the average man, or for the student who has taken up physical culture very recently. It shows, however, the degree of hardihood and vigor which may be attained through the practice of air baths, cold water baths and a general physical culture life.

cold climates, it is covered and smothered with clothing. But we can accomplish a partial return to the natural state by the practice of air baths, and in that way keep the pores of the skin active.

There are constant vaporous exudations from the pores of the skin which should be taken up and away by the air through the process of evaporation. In great quantities these vapors are condensed in the form of the liquid perspiration with which we are so familiar, but this too, will largely evaporate as it comes to the surface, if the air is permitted to play upon the skin freely. In the summer there is much more of this perspiration, and the process of its evaporation serves to keep the body cool and comfortable when it would otherwise be overheated; so wonderfully has Nature provided for our every need!

Air baths consist simply of exposing the entire body to the air, bathing it in the air, so to speak. The thought of an air *bath*, would never have occurred to anyone if it were not that the skin has been deprived of air very largely—in short, has been smothered—by the irrational use of coverings. Air baths will not only give the skin a chance to breathe by this means, keeping the pores active and promoting the most perfect elimination of wastes, but they will have the most soothing and at the same time invigorating effect upon the nervous system, and particularly when the air is either cool or cold. The contact of the air with the innumerable nerve end-organs located in the skin has a most resting and refreshing influence, and for this reason I would especially advise those suffering from nervous disorders or any nervous tendencies to devote themselves faithfully to air bathing. It would be wise for such sufferers to take two or three extended air baths each day, and it would be even better if they could so locate themselves that it would be convenient to avoid the wearing of clothing at any time of the day or night. To have the skin continually exposed to the air would alone accomplish wonders in neurasthenia and allied complaints.

The length of time that one should give to his air baths will depend upon his convenience. Let him make them last as

long as possible, and if this means all day, so much the better. Every one should try to take an air bath of at least a half hour every day, even if this includes the time when he is taking his exercise. It is particularly important to take one's exercises nude because of the excess perspiration under such circumstances, and because one will enjoy them much more. It is also a good thing to take the dry friction bath, referred to later in this chapter, in conjunction with the exercises and this air bath.

One advantage of this form of health-building is that it really takes no time. You can take the air bath while you are doing other things, whether reading or moving about in your room. A couple of young men spending the evening together can play checkers, chess or other games and at the same time enjoy an air bath through the entire evening. The more pure the air the better, though you will naturally desire the purest of air for the sake of your lungs, and the windows should be open. Just how far open will depend upon how cold it is and how much cold you can endure with comfort.

It is naturally essential that the body be kept comfortably warm, with the blood in good circulation. If the room is very cold this may be done by exercise, either mild or active, as the case may require. The colder the air the more invigorating, for really cold air will have something of the effect of a cold water bath. If you can take an air bath in zero temperature you will find it very stimulating, but it should not last long in such an atmosphere, and I would not advise the man of average strength or resistance to attempt it. You will really get the same benefits from exposure to the warm air in summer. It is a tonic under all circumstances.

For the same reason I would advise every one to cultivate exposure to the winds. It is the action of the winds which keeps the atmosphere of the earth pure, and they are beneficial in every way. When you go out on a boisterous day, when the wind is strong enough to blow through your clothing as though it were mere mosquito netting, you will find the result exhilarating and thrilling.

As I have said elsewhere, one should endeavor to so clothe himself that he will exclude no more air from his person than he can help. In summer, if he dresses as lightly as he can and should, he can almost enjoy an air bath all the time. Fabrics which keep out the air should be avoided, and this is why linen, or even cotton, is preferable to wool for underwear.

Wherever possible, it is advisable to take a sun bath at the same time that you take the air bath. (See *Sun Baths*, this chapter.)

BEDROOM BATH.—*How to Take a Cold Rub in One's Bedroom.*—This can be done in two ways, either by the use of the hands or with a cold towel. To some the former is the more enjoyable, while the latter is the more effective. If splashing must be avoided, then the latter is by far the better plan. The splash can be taken with nothing more than the ordinary wash-bowl, though the addition of an absorbent bath-mat is an advantage. On jumping out of bed, dip both hands in a bowl of water, bring up several handfuls of the water directly upon the face, opening the eyes to allow them to get the full benefit of the cold water. The effect of contact with the water itself in this way is very different from merely dipping the hands in the water and then rubbing the face. There is no comparison in the enjoyment, especially when one gets used to the volume of water. Now take as much water as the hand will carry and rub around the neck; then scoop up water with the right hand, taking it up the left arm over the shoulder and into the left armpit. Do the same with the left hand over the right arm. Then bring a good "splash" over the chest and body, working the hands around to the back and wetting it as much as possible. Then give each leg a rub with as much water as it is convenient to use. Now, if the bowl is movable, place it on the floor and give the loin parts as quick a bathing as possible.

Follow this with a vigorous rubbing down, taking care that the body is thoroughly dried.

BRAND BATH IN TYPHOID.—The so-called Brand baths, much used in typhoid fever, offer a good illustration of the

value of hydrotherapy in toxemic conditions. According to Brand's directions, the full bath should be given and repeated as often as necessary, when the rectal temperature reaches or exceeds 103 degrees Fahrenheit. Preferably a portable tub is used, brought to the bedside for convenience. The temperature of the water is about 68 degrees Fahrenheit. The patient's face and chest are first sponged with cold water, and then he is quickly immersed in the cold water, up to his chin. A cold moist turban is wrapped around the head. Attendants rub vigorously while he is immersed for three minutes, he is then placed in a sitting position so that in a few seconds several gallons of water at fifty degrees may be poured upon his head and neck, whereupon he is again immersed and the rubbing continued for five minutes, except for the abdomen. He is again raised to the sitting position and the affusion of cold water repeated, whereupon another immersion of five minutes with friction follows. Sometimes the bath must be shortened, though it should usually be repeated every three hours if the rectal temperature exceeds 103 degrees Fahrenheit. In cases of extreme debility, heart lesions, pregnancy, tuberculosis of the lungs and arterio-sclerosis this bath should be avoided.

Between these Brand bath treatments cold abdominal bandages should be applied, with frequent changes, as necessary, and cold rectal irrigations should be administered after each movement. Two or three colon retention enemata will of course be given each day.

In some cases where this treatment cannot be applied, cold sectional ablutions must be applied. In many cases prolonged neutral full baths are effective with rubbing, and cold affusions to head, neck and chest every three minutes.

CABINET BATH.—See *Hot Air Cabinet Bath* and *Vapor Bath*.

COLD BATHS IN HEALTH AND HOW TO TAKE THEM.—[See also *Cold Plunge, Bedroom Bath, Shower, Sitz, Sponge.*]—Cold water, like cold air, is highly energizing, and if we avail ourselves of its advantages we can accomplish a great deal in increasing the vital

stamina and hardihood of our bodies. It is necessary, however, for each one to know something of his own individual requirements and powers of resistance to cold, not merely in order that he may get the best results, but even that he may avoid doing himself any harm. What may serve well enough for one man, perhaps a magnificent example of robust animal life, may not at all be suited to another of less vitality. Those who are strong may plunge into cold or icy water at any time and under any conditions, and emerge with a sensation of exhilaration and delight, but the man of poor circulation, who is only trying to gain in strength, should pause before he attempts to emulate the heroic example of his stronger and more full-blooded friends. He should proceed intelligently; it should be his purpose to gain as much benefit as possible from his efforts, and not to see how much he can endure. Not only should the temperature of the water be adjusted to suit his powers of resistance, but the form of the bath should also be selected according to his condition.



An ice cold bath at the age of sixty-five, illustrating the extreme hardihood and vigorous circulation which may be acquired with the help of cold bathing. In this case the bather first gets his exercise by chopping the hole in the ice, then undressing there preparatory to his dip. This form of bathing is too rigorous and severe to be generally recommended, except for those of powerful strength and exceptional vital resistance, but it shows clearly the degree of vitality which may be attained through rational methods.

The reaction is the important thing in a cold bath, and unless one secures this reaction he would do better not to attempt it. There are few cases, however, in which an individual is so weak or delicate that the application of cold or cool water may not be so modified as to make it possible for him to get a reaction and to benefit by it.

The first effect of the contact of the cold water with the skin is to cause the latter to contract, driving the blood away from the surface of the body and toward the internal vital organs. Immediately, however, the reaction follows, the nerves are awakened, the heart is aroused and the blood comes surging back to the surface of the body in great volume, accompanied by a delightful sense of warmth and exhilaration. The skin takes on a ruddy glow of color, and the entire body is invigorated, stimulated, energized. The physiological processes of this reaction are referred to in the general discussion of the Science of Hydrotherapy in the beginning of this chapter. It is for the sake of this reaction that one takes the cold bath, and without this response and recuperation one may suffer a more or less severe depression. [See also *Recuperation*.]

As a general thing, therefore, it may be said that one should not stay in the bath longer than necessary to get this reaction, which means a very few moments in most cases. The average man and woman will get much better success in his cold bathing if strict brevity is observed. Having accomplished the purpose of the bath, there is no reason for longer remaining in it, for to do so may result in wearing off the stimulating effect of the reaction and in reducing the vital heat of the body to an undesirable extent.

There are certain conditions which are favorable and some which are unfavorable for successful cold bathing. One of powerful physique, as we have already seen, need scarcely consider any of these, for he would undoubtedly profit by a cold bath under any conditions. He could take a cold bath in an atmosphere and temperature like that to be found at the North Pole, first stopping to cut a hole in the ice for the purpose, and he would make himself even more hardy and

vigorous by the experience. As a matter of fact, I have known a number of men who have made a practice of doing this very thing all winter long. But for anyone who is delicate, or who is in any way doubtful of his recuperative powers, I would certainly recommend that he take his cold bath in a reasonably warm atmosphere, even if he has just concluded taking his exercises in a cold, open-air room. It is ever so much easier to get the reaction and to enjoy a cold bath in a warm room, and for the beginner this is an important fact to keep in mind. We should always remember that this is a matter that depends upon the individual and his strength.

The temperature of the water is a matter that must also be adjusted to the varying needs of different individuals. The colder the water, the more invigorating, providing one can recuperate. But it is usually best for the beginner to go about it gradually, and if he cannot truly enjoy really cold water the first week that he takes up the practice, then he should content himself with water that is only cool. Perhaps, indeed, if he is delicate, he should use only tepid water, gradually lowering the temperature as his circulation improves and he gains in strength, until he reaches a point where he can simply "wallow" in water at forty or fifty degrees Fahrenheit, or colder, with delight.

A very important condition is that one should be thoroughly warm before taking a cold bath, and it is for this reason that it is usually advantageous to take the bath after the active exercise of the day, when one is warmed through and through with the natural warmth of the body. There is an old theory that one should never touch cold water when he is very warm, but the supposed dangers of this have been greatly exaggerated, to say the least. It is true that a sudden change from an over-heated condition to a chill is likely to disturb or upset the internal harmony of the body, causing serious congestion and subsequent trouble, but a cold bath, taken properly, will not produce such a chill, even when over-heated. Prolonged immersion in cold water after being over-heated would often do so, but no one who knows even the

A B C of cold bathing would make such a mistake. When one is very, very warm, he is better able to withstand the application of cold water than when he is already cold or chilly, for he has an excess of body heat which he can dispense with to his added comfort. If he takes a cold bath when he is very warm, he will get the reaction all the quicker, and he will continue to be warm. Indeed, he will probably find himself perspiring after he has tried to dry himself thoroughly with a towel.

I would never advise anyone to take a cold bath when he already feels chilly, or when his hands and feet are cold. If you are ready for the bath, and have any doubt on this point, it would be wise to take time for sufficient exercise to warm you through and through before taking the bath. Any form of exercise that will answer this purpose will be satisfactory, though if limited in time you will probably find that you can warm up for the bath through rope skipping or stationary running more quickly than through ordinary free movements.

The time of day selected for the cold bath may depend upon the individual and his other habits and affairs. As a rule, it is most satisfactory taken after the regular daily exercises, and in most cases it is a good rule to take only one cold bath each day. If one takes his constitutional exercises the first thing in the morning it is a very good time to follow them with the bath. Even if one takes his exercise at some other time of day it is often a good plan to take the cold water bath immediately on getting out of bed, or following a dry friction rub, in order to thoroughly awaken and arouse all the functions and activities of the body. There is no objection, in such a case, if one takes another cold shower or sponge later in the day to follow his exercises. If one plays tennis for an hour or so in the afternoon of a hot day, for instance, the fact that he has taken a cold plunge in the morning should certainly not deter him from taking another at this time, for he will enjoy it and benefit from it.

After exercise, especially if one has taken a great deal of vigorous exercise and has perspired freely, it is usually a good

plan first to rinse off the perspiration with warm water before using the cold. This is very conveniently done in a well equipped shower bath, but may of course be accomplished equally well in the use of a tub or even in sponge baths.

If one makes a regular daily practice of this, that is to say, if he perspires profusely in his daily exercises, and if then, still perspiring, he quickly but thoroughly rinses the sweat all off with warm or nearly hot water before using the cold, he will find that this will answer all the demands of bodily cleanliness and will for the most part make unnecessary the weekly or occasional warm bath with soap.

Dressing without drying is a very good plan in many cases, providing one has good recuperative powers. Rubbing dry with a rough towel has many of the advantages of the dry friction bath, which is referred to elsewhere, but it also helps to stimulate the circulation and to bring about the most perfect recuperation after a cold bath. For the average man or woman this is usually the preferred plan, or at least whenever there is any doubt about recuperation. But if one has no difficulty in this direction, then it is often better to avoid drying, and to put on underwear over the wet skin, allowing it to dry naturally with the heat of the body. The effect of the bath is thus intensified. As a means of increasing the depurating activities of the skin this is similar in form and result to the wet sheet pack.

THE COLD MITTEN FRICTION BATH.—This bath is taken the same as the *Wet Hand Rub* (page 1495), except that a mitten made of coarse mohair, or something of this kind, is used for the purpose. It can be taken, if necessary, in bed, though it is better that the patient stand with his feet in water of from 104 to 110 degrees, if possible. It is administered ice cold, cold, neutral or hot, in accordance with the needs of the patient, and different results are obtained by either saturating the mitt with water, or having it merely wet, or simply moist. The attendant must be careful to administer this bath in accordance with the instructions of the physician or director. There is no bath administered outside of the percussion douche

which equals the cold mitten friction for producing prolonged reaction.

COLD PLUNGE.—This is one of the most satisfying forms of cold bathing, and while in some instances it may be rather too robust a treatment for very delicate persons, yet by modifying the temperature of the water it can usually be made agreeable. It is perhaps the most natural form of bath, and one practiced by barbarians and aborigines the world over, as well as by many species of animals. In a state of nature, one merely takes a plunge into the river or lake most convenient, but in the civilized home one accomplishes practically the same thing by complete immersion in the gratefully cool waters of the large porcelain-lined tub.

One advantage over other forms of bathing lies in the comfort of shifting to the horizontal position and thus resting the body in general and the internal organs in particular. In the vertical or erect position these organs are all hung, as it were, from the spine, but in the horizontal we are relieved of any strain incident to this. Furthermore, when submerged and subjected to the consequent equalizing of pressure on all sides, the effect is like that of floating the internal organs in a fluid of density and weight very nearly equal to their own, and this cannot help but be restful. Of course this applies with even greater force in the restful and relaxing qualities of the hot bath, discussed in another place.

Where possible, fill the bath tub the night before so that little or no interval elapses between the time of getting out of bed and the beginning of the bath. Stand by the side of the tub and with both hands bring the water vigorously to the face, and around the neck, but not over the hair. (I'll tell why later.) Then quickly scoop up as much water as possible with the right hand up and over the left arm and shoulder, taking especial care to reach the arm-pit. Do the same with the left hand over the right arm and shoulder. Now, lean over the tub, rapidly scoop up with both hands as much water as possible throwing it upon the chest slapping it vigorously at the same time. Now, jump into the tub, sit down and rapidly

scoop up the water over the chest and trunk and do the same thing up the back, at the same time stretching the legs out so that they are entirely covered. If by this time you have had enough, pull out the plug but stand in the cold water while vigorously rubbing off with a coarse towel. If, however, you desire a little more, the whole body may be immersed in the cold water for a few seconds in the horizontal position. The advantage of standing in the cold water while drying is that the prolonged bath to the feet generally favors a more powerful reaction, thus bringing good and healthy blood to circulate in the feet and by that means keeping the feet and legs in a more healthy and vigorous condition.

COLD SPLASH. [See also *Hot Splash*.]—This is a simple and convenient method of taking a cold bath when one is limited in facilities. Sometimes it will be more expedient even than the cold sponge bath, because one does not even require a sponge or cloth.

The general comments made in the case of the cold sponge bath will apply here as well. All that is necessary is a small bowl of water. It is easy to recuperate from and is well suited to those of delicate strength. The technique of this bath is described in detail under the heading *Bedroom Bath*, (which see).

Another method of taking it is to have two or three inches of water in a bath tub, then either squatting or sitting down in it, quickly splash every part of the body.

COLD SPONGE IN HEALTH. (Self-applied.)—This is the method of bathing usually suggested for a beginner, or one of limited recuperative powers. The plunge and the shower are both more invigorating, if one can take them, but even the most delicate can take a sponge and benefit from it. For those who have not the facilities of tubs and showers, the cold sponge offers a very satisfactory substitute.

If a very large sponge is used, one can hold it above his head and squeeze it out, thus getting practically the equivalent of a shower, and many athletes have trained with just this kind of an improvised sponge shower. As a general thing,

however, the term, "sponge bath," has reference to the use of either a sponge, cloth or towel, by means of which one can wash or rinse off the body by sections. If it is done quickly, the entire body can be covered in a few moments.

One can take a sponge bath anywhere, for any kind of a cloth may be used, and very little water is required. The temperature of the water should be determined by the strength and vigor of the individual, remembering that the colder the water, the more invigorating, providing it is not too severe to permit perfect recuperation. It is well not to try to take it too cold at first. As a matter of fact, for one who is very delicate, I would recommend starting in with the use of tepid water, scarcely colder than the body temperature, gradually changing to cool, and finally, when strong enough, using water that is really cold.

COLD SPONGE WITH HOT FOOT BATH. (*For Delicate Persons.*)—Even when taking cold baths under ideal conditions, and with all possible care in regard to the temperature of the room and water, there are still some of weak hearts, poor circulation and low vitality who have difficulty in getting a proper reaction. In such cases I would recommend the plan of standing with the feet in hot or rather warm water for a few moments before the



A towel wet in cold water, and vigorously used in this manner over the entire body, is an excellent mode of stimulating the skin, combining a measure of exercise with the tonic effects of the bath.

bath and while taking the cool or cold sponge, as elsewhere advised in description of *Sponge or Towel Bath*, for patients (which see). The water should be deep enough to immerse the ankles, and sometimes, if in a large tub, it is well to kneel in it while sponging the upper body.

The hot water in which the feet are placed will do much to keep up an active circulation and a satisfactory degree of bodily warmth, so that with the aid of this help one may be able to truly enjoy the cold water on the other parts of the body. No one should entirely abandon the idea of taking cold baths for the sake of building increased vigor until after trying this plan, which will make them a possibility in practically all cases.

THE COMPRESS.—The compress is simply the modern hydro-therapeutic application of the old-fashioned poultice. Folded linen, or soft cloths answer for the purpose, with flannel, rubber blanket or mackintosh for covering to exclude the air. Compresses vary considerably, largely owing to the differences of temperature. In cases where a speedy reaction of temperature is imperative, an ice cold compress can be used to advantage. Not only may the tissues immediately related to the skin be affected, but also deep-seated tissues. A very cold compress is made by saturating the folded cloths with ice water, or breaking up ice and placing it between the folds of the cloth. It is very seldom that such a compress should be allowed to remain for more than four or five minutes, as continuous cold applications lower vital action, and they even suspend all vital activity. Yet, in cases of local inflammation of joints, in fever, delirium, acute nausea or cerebral congestion; in case of inflamed or bleeding hemorrhoids or hemorrhages, it is used to great advantage. Oftentimes an ice bag or an ice compress laid across the trunk of an artery will reduce and cool the blood supply of the part supplied by the artery, in this way materially aiding the healing processes. Contraction of the vessels of the uterus may often be caused by the application of cold compresses to the inner portions of the thighs, the perineum, the vagina and lumbar region. In cases of

fever, ice bags, or ice compresses to the spine will materially aid in lowering the general temperature. When severe bleeding needs to be relieved temporarily, an ice compress applied directly to the wound, and over a large area surrounding it, will have the effect, but as the freedom of the flow of the blood stream is essential to induce healing, great care must be exercised not to allow the cold too great an influence or too long an application, usually not longer than half an hour.

The ice cold or cold compress has a powerful effect through the blood vessels of the skin upon the circulation of the blood in the internal viscera. Rapid contraction of the cutaneous blood vessels causes the dilation of the deeper lying vessels, and when the reaction takes place the withdrawal of the blood from the internal blood vessels to the surface induces a healthful and vigorous circulation.

In typhoid fever the cold compress applied to the abdomen is exceedingly useful. In cases of pneumonia, with the lower front chest and the affected side covered with such a compress, and not changed until reaction to warmth has been secured and maintained for several minutes, the effects are highly beneficial. In order to produce the continuous contraction of the surface blood vessels, the compress must be renewed every five to eight minutes, as if it is allowed to remain until reaction is established, from fifteen to thirty minutes, the effect is different. When intestinal hemorrhages call for constant cooling treatment, the cold abdominal compress is far better than the general cold bath.

The cold compress applied over the heart for a few minutes in cases of cardiac insufficiency is very effective, and some authorities use it as a stimulant by allowing it to remain for five or six minutes, then removing it for about double the period, and again applying it.

The Evaporating Compress consists of the folded linen so applied that the evaporation takes place from it. When a cold in the head is acquired such a compress is of great value, applied to the neck.

THE COMPRESS, ALTERNATE. (*Hot and Cold.*)—This, as its name implies, consists of the application of very hot and very cold compresses alternately. They should be renewed about every half minute. Occasionally it is found desirable to apply the cold for a longer period than the hot compress, or *vice versa*. The effect of this alternation is to produce the primary effects of both hot and cold compresses, without any of the after reaction. The result is it is generally a powerful excitant and stimulant, and can be used to good advantage upon the spine and elsewhere, in the case of vigorous people who wish to secure a rapid tonic effect. When the hot fomentation is allowed to remain in place for four or five minutes and is removed, and the cold one applied for only a few seconds, the effect is very different from where both are applied for the same length of time. In cases of neuralgia, gastric or any other visceral congestion, or spinal irritation this form of compress is better than the alternate where each application is of the same duration.

COLD TOWEL BATH.—This is exactly the same bath as the *Bedroom (Splash) Bath* except that by sufficiently wringing out the towel in the cold water all splashing is avoided. There is an advantage, too, in that one can “saw down” the back with the towel when it is impossible to reach the whole back with the hands alone. If this bath can be taken with a towel that is not wrung out it is, necessarily, much to be preferred, but the ordinary housewife has decided objections to any such splashing proceedings in her bedrooms.

COLD TOWEL BATH FOR PATIENTS.—The same effect as in the case of the *Cold Mitten Friction Bath*, but to a slighter degree, is produced by the use of the cold towel. This is generally applied to a patient who is unable to rise. Instead of rubbing the body with the towel, a linen towel is wrung very dry out of cold water, shaken and then laid over as large a surface of the body as it will cover, the attendant then vigorously rubbing the towel, covering as large a portion of it at a time as possible with the hands, and pressing it firmly upon the surface of the patient, the rubbing being con-

tinued until the towel becomes warm. The wet towel is then removed and a dry towel placed in the same manner, and rubbed until vigorous reaction sets in. It must be distinctly understood that the rubbing is over the towel, and not by use of the towel upon the skin itself.

THE DOUCHE BATH.—The douche bath is where one or more columns of water are directed against some portion of the body. The douche is subject to three controllable variations, namely, temperature, force or pressure and amount. In other words, the douche may be hot, tepid or cold; it may be given with slight initial pressure or with that of 50 or 60 pounds; and the amount may vary from the hair jet to a nozzle three-eighths of an inch in diameter. It may be a general douche, a localized douche, and is also capable of internal application as to the nose, eye, ear, stomach, rectum, colon, bladder, urethra and vagina. The douche is essentially stimulating, combining both thermal and percussion effects, and is one of the most powerful agents used in hydrotherapy.

The percussion of the douche is found to aid the movement of the blood through the heart and accelerates the current of lymph in the lymph channels, thus improving the general circulation. The hot douche also elevates the temperature and the longer the bath and the higher the temperature, the greater its effect upon the body. The cold douche is found to have the most powerful tonic effects. It increases the capacity for mental and muscular activity and stimulates the appetite for food. By reason of the massage effect produced by the moving pressure of the douche on the surface of the body, it encourages circulatory action to a high degree, and at the same time tones up the nervous system to resistant power, against all attacks from cold.

The horizontal jet is the most common form of the douche. Its simplest form of application is by means of the jet attached to an ordinary piece of garden hose. In cases of in-

as well as all the sensitive parts, as the stomach, bowels, uterus, etc., except in the case of the most robust, the horizontal jet is broken into a spray.

It is self-evident that to properly administer the horizontal douche the appliance must provide an abundance of both hot and cold water, so they may be mixed to produce any required temperature, with "head" sufficient to produce any pressure, and in a tube of sufficient capacity to allow of a greater or less mass as required. The patient stands at the required distance with his back turned to the jet which is in the hands of the attendant. Beginning with the left foot, the attendant applies the douche or stream up and down the left leg; then up and down the right leg; across the lumbar region, up and down and back and forth across the back; also up and down the arms which are held at the sides. The spine should receive special attention, the douche reaching from the coccyx to the cerebellum, and being also applied up and down on each side of the column. The patient now turns his left side to the attendant, holding the arm out so as to allow the douche to reach the sides and under the arm-pit, lowering the arm and receiving the jet on the arm itself after the side has been well doused. The same is done with the right side. Then, facing the attendant, the front parts of the legs and body are treated as were the back parts, care being taken, of course, to break the jet at any point needed by the sensitiveness of the patient.

In the general application of the douche, the stream is directed upon different portions of the surface in succession, but is never allowed to fall steadily upon one spot.

The temperature and length of time of this douche should generally be specified by an expert. It is then followed by a reduction in temperature to meet the special condition of the patient, or if the best effects are required, the hot water is completely turned off and the cold douche immediately substituted. The attendant should be exceedingly careful and the patient should insist that there be little or no interval be-

After the hot application, the body radiates heat quickly and the skin speedily becomes chilled. If there is any delay, the cold douche not only fails to produce the tonic effect desired, but becomes an actual injury. If for any reason the delay between the two applications is necessary, the patient should be covered by a warm woolen blanket, and if the interval is much prolonged the hot application should be again applied before the patient is subjected to the cold jet. The sooner the patient learns that the cold is not to be dreaded after the hot douche and that the effect is far greater when the cold immediately follows the hot, the better it will be for him. The reaction in such cases is not only physically beneficial, but produces an exhilaration the like of which no other bath is able to effect.

The whole body should be gone over with the cold as with the hot, less time being taken for it, especially if the water is very cold. The body is then thoroughly dried, and if a short walk or moderate exercise be taken thereafter, its beneficial effects will be enhanced.

If for any reason the vitality of a patient is so lowered that danger is apprehended, or if through inadvertence there has been too excessive an application of cold to the patient, it is well to remember that a general hot douche, a full hot bath, a hot blanket pack or any other general hot application is the very best course of procedure to follow.

It can well be seen that with proper appliances the douche is capable of a variety of applications. It may be hot, cold or neutral, or very hot and very cold. If necessary, where the pressure can be regulated, it may come with great force or very gently.

The neutral douche at a low pressure has a calming and sedative effect, when taken for from three to fifteen minutes. Yet the same douche used with a pressure of fifty to sixty pounds dilates the surface vessels and causes contraction of the vessels of the brain and internal viscera, thus powerfully stimulating instead of soothing. Yet the neutral douche has so decided an effect in lessening the muscular tone and capacity



Application of the douche. Any garden hose can be used for the average home. The percussion douche may be applied very simply by merely pinching the hose with one hand, thus interrupting the column of water into separate and momentary jets.

that it should never be used where the patient is strong enough to endure the hot or cold douche.

The percussion douche is practically the same as the ordinary douche except that by means of an ingenious device the stream of water is cut off at rapid intervals and a certain amount of air introduced behind each jet of water, so as to increase the force of its propulsion upon the body. The result is a fusilade of water jets which strike the skin one after another with great rapidity. This percussion douche can be used at any temperature and pressure and is especially desirable where rapid and powerful reactive effects are required. By its use both hotter and colder water can be projected upon the body than when a steady stream is used. This kind of douche applied to the skin is the most powerful of all known tonics. It also allows the use of very hot water on the bodies of those who are sensitive to cold and who shrink from the ordinary cold douche. (See also *Shower Bath or Rain Douche*.)

DOUCHE. *Localized Douches.*—There are times when a special effect is desired upon some certain part of the body. When this kind of treatment is indicated, the douche is localized upon the spot and given at the temperature suggested. For instance, in cases of typhoid, or other grave fever, where it is necessary to arouse the activity of the brain and thus excite the nervous and muscular systems throughout the whole body, it is well gently to pour water at from 50 to 60 degrees over the back of the head. Such an application of cold water given for a short time will excite the brain, and is useful also in melancholia, either with or without stupor, and in sunstroke where the skin is pallid. Continued too long, the opposite effect is experienced.

The cold douche on the back of the neck is a powerful stimulant upon the respiratory organs, but the water should not be too cold nor the douche too prolonged, otherwise suffocation by arresting the heart's action may result.

A short tepid douche on the back of the head or back of the neck will often allay cerebral excitement and may be used

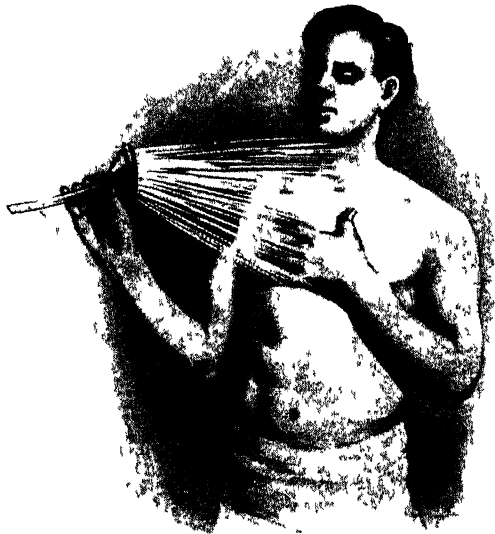
in insomnia or any form of cerebral irritation. In such case, the water should be from 80 to 92 degrees and the douche should last from three to five minutes. It is always well in using this form of application to the head to be exceedingly careful. It is best to begin with milder measures and watch the effects before proceeding to the more rigorous methods.

The spinal douche is often used to great advantage at all temperatures. The jet should play not only upon the center of the spine, but upon both sides and with all the pressure that the patient can bear.

There are cases where douches can be applied to the lumbar region, the abdomen, the shoulders, upper part of the trunk, the feet, the soles of the feet, the perineum, and the anus. In all these cases, specific results are desired and the treatment should always be given under expert advice.

There is a series of douches termed visceral douches. These are all given for the express purpose of reaching some specific organ within the body, and necessarily require expert advice, and an intimate knowledge of the exact location of the parts concerned.

THE DRIPPING SHEET.—The dripping sheet bath is the same as the *Wet Sheet Rub* bath, except that it is more vigorous, and the sheet must be, as its name implies, dripping with water. In some cases a better effect is produced by spatting



The use of the hand spray, rubbing with the other hand, a very acceptable form of bathing for those who have limited facilities in the way of shower baths. The hand spray may be purchased for almost nothing, and can be attached to the bath tub faucet, or indeed, to any faucet by means of an insert. It offers a most satisfactory cold douche after a warm tub bath. One should be careful, however, to keep the spray directed upon himself rather than upon the ceiling, floor and walls of the room.

the patient all over the body, rather than by rubbing. After the spatting is continued for not more than half a minute, a half pail of water, at a temperature of fully five degrees lower than the temperature of the sheet is instantaneously poured over the patient. The spatting then continues for another half minute, and another half pail of water is used, as before. The colder the water, the greater the beneficial effect, provided the patient has the necessary reactive powers. But, if after the first shock he begins to have a secondary chill, the bath must speedily be terminated.

If the patient is unable to stand to take this bath it can practically be given in bed, with a rubber sheet to protect the bed-clothes, though the wet sheet must be partially wrung out before being applied, and instead of pouring the water over the patient, a little water can be sprinkled, either from a sponge, or by means of the hand.

DRY FRICTION BATHS.—For increasing the circulation in the skin and so rendering it keenly active in its function of throwing off the waste products of the body, to the great increase of health and vitality in the whole system, nothing is so

good as the dry friction bath.



An excellent type of flesh brush for use in the dry friction bath.

In order to be well and strong, not only must you have a clean skin, but you must have an active skin. The skin really breathes; through its minute pores it absorbs oxygen and throws off impurities, just as do the lungs.

Note the difference between a horse that is curried and brushed daily and one that is given but little attention in this way. One looks sleek and proud, while the other appears out of condition and far from satisfied with itself. Nowhere is the value of currying more recognized than in the United States cavalry. Many troop commanders insist upon grooming for three-quarters of an hour in the morning and the same length of time in the afternoon. When out on frontier scouting expeditions, it has been invariably found that the commander who insisted most rigorously on the grooming of his horses, headed the most effective troops in respect to the endurance of their steeds.

The pores of many persons manifest but little activity. They wear very heavy clothing, the air rarely comes in contact with the skin, and circulation and the functional processes are therefore performed very poorly. The skin becomes rough and coarse, almost like sandpaper to the touch, or moist and clammy, almost dead. A perfectly healthy skin is smooth and soft like satin, and in order to acquire and maintain the surface of the body in this condition not only is a proper diet essential, but dry friction baths of some kind must be regularly taken. Perfectly pure blood depends largely upon open and active pores. Many diseases can be avoided if you have an active skin to assist the depurating organs of the body.

The best time to take a friction bath is immediately on arising. If you take any exercise it should precede not follow the bath. The various ways of using the towel, which will enable one to thoroughly rub every part of the body, are shown in the following illustrations. The average individual will imagine that he can rub himself all over without instructions of this character, and no doubt, to a certain extent, this is true; but if the friction bath is taken as herewith described, and its effects compared with the ordinary rubbing that is done without any definite knowledge of the subject, one will very quickly learn the value of thoroughness in this connection.

Not only do these methods thoroughly awaken every part of the surface of the body, but they exercise nearly all the muscles of the arms, chest, and the back between the shoulders. In fact, if one will vigorously go through all these various motions, he will usually experience a certain amount of fatigue.

As most readers know, the friction bath can be taken with the ordinary Turkish or a friction towel. Care should be taken to secure good towels, as the cheap kind tear easily. Soft bristle brushes can be used, though one cannot secure quite as much exercise while using them as with the towels. It is advisable to follow the friction bath with a cold bath. The latter can be taken with a wet towel or wet sponge, or, if desired, immersion in a tub can take the place of these.

Better even than the friction bath, in that it accelerates the circulation throughout all the organs of the body as well as the skin, is muscular exercise. This especially increases the activity of all the depurating organs. The skin, kidneys, lungs and bowels will perform their work of eliminating the impurities far more effectively if you exercise regu-



A dry friction rub with the bath towel.

larly than if you lead an inactive life. (See also *Exercises and How to Use Them*, Chapter I, Volume II.)

THE DRY PACK.—There are some cases where the patient is weak or anemic through loss of blood, through hemorrhage, or after a severe surgical operation, or when subject to some form of intermittent fever where the temperature of the body is persistently lowered, that a dry pack serves the purpose of raising the temperature better than the wet sheet pack. This is applied in exactly the same way as the wet pack, except that dry woolen blankets are used, taking care that the blankets are well tucked in at the head and feet to avoid a circulation of air. Plenty of hot water bags should surround the patient and especially at the feet and he should be induced to drink plenty of water during the continuation of the pack.

If a rise in temperature is desired the pack should cease before sweating begins. If it is allowed to continue, the sweating will soon be as vigorous as in the cold sheet pack. It is necessary, however, to be cautious in the use of this pack as heat elimination is practically avoided, while in the wet pack it is produced. If, therefore, the dry pack be continued too long, the temperature may be raised higher than is desired. (See also *Wet Sheet Pack*.)

THE ELECTRIC LIGHT BATH.—This is a cabinet bath in which a number of electric lights are placed so as to shed their rays upon the whole body of the patient at the same time, except the head, of course, which is excluded, and around which and the neck a cold towel is placed. The effect is to produce heat and also further the processes of elimination. This bath is always followed by the warm and cold douches, and it is used with great benefit.

ENEMA.—See *Internal Baths*.

THE EVAPORATING SHEET.—There are certain cases where it is essential to reduce the temperature immediately. In no way can this be done better than by enveloping the patient in a wet sheet wrung out of hot or cold water, and then allowing the cooling to take place by evaporation. If possible, the patient should be made to stand up and a gentle rubbing

of the whole body kept up during the continuation of the bath. If ordinary evaporation does not produce the result desired speedily enough, vigorous fanning will aid the process. The effect is equally good whether the hot or cold sheet is used and many prefer the hot sheet. The cold sheet should be used only when surface congestion is so pronounced that the cooling by means of the sheet will restore the normal condition of the blood vessels. (See also *Wet Sheet Pack*.)

FOOT BATH.—See *Cold Sponge, with Hot Foot Bath*.

FRESH WATER BATHING.—See *Open-Air Bathing*.

FULL BATH.—See *Cold Plunge, Hot Bath, Neutral Bath*.

THE GIRDLE OR ABDOMINAL PACK.—This is simply a wet pack, bounded by the nipple line of the breast above and the hip joints below. It is used for the purpose of combating congestion of the abdominal viscera and is more easily applied than the half pack or the complete pack, and yet often produces all the effects that it is desired to secure.

The wet cloth may be either hot or cold, according to the condition and effect desired. In either case, it is snugly covered with a dry woolen cloth. When the pack is applied cold it is allowed to remain for

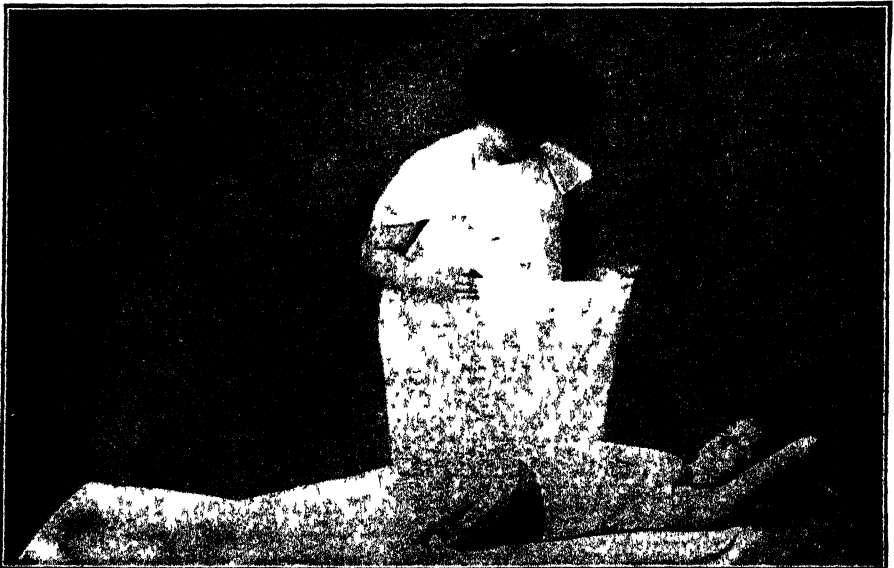


Illustrating method of putting on evaporating sheet.

two hours or longer. If applied at night it may remain until morning. When applied hot, hot water bottles are placed over the pack to maintain its heat. It may remain for from a half-hour to two hours.

HALF BATH.—The half bath, as its name indicates, is a modification of the full tub bath, and may be either hot or cold. It is not generally to be advised in the case of hot baths, but where a full cold bath would be somewhat of a tax upon the recuperative powers of the individual, the half bath, which consists in immersing legs and hips, the water coming up to the navel, is very effective and comparatively easy to recuperate from. It is like the sitz bath with the legs included. The so-called "Nature Bath" is similar except that the water is not deep enough to reach the navel and only hips and feet are included. The half bath is a satisfactory bath for those in health who do not feel quite equal to a full plunge in the tub in the beginning. It is a stepping stone to the full bath, in other words.

HEALTH AND BATHING.—See *Advantages of Bathing in Health*.



Putting on an abdominal pack, showing the extent of the surface of the body covered.

HOT AIR CABINET BATH.—The cabinet bath is a device for supplying in one's own home the advantages of a Turkish bath in the way of dry hot air, inducing copious perspiration. As its name indicates, it is a cabinet large enough for one to sit in, but with the head outside, so that one may breathe perfectly pure air. These baths are made in varying forms and of different materials, some of which are quite inexpensive.

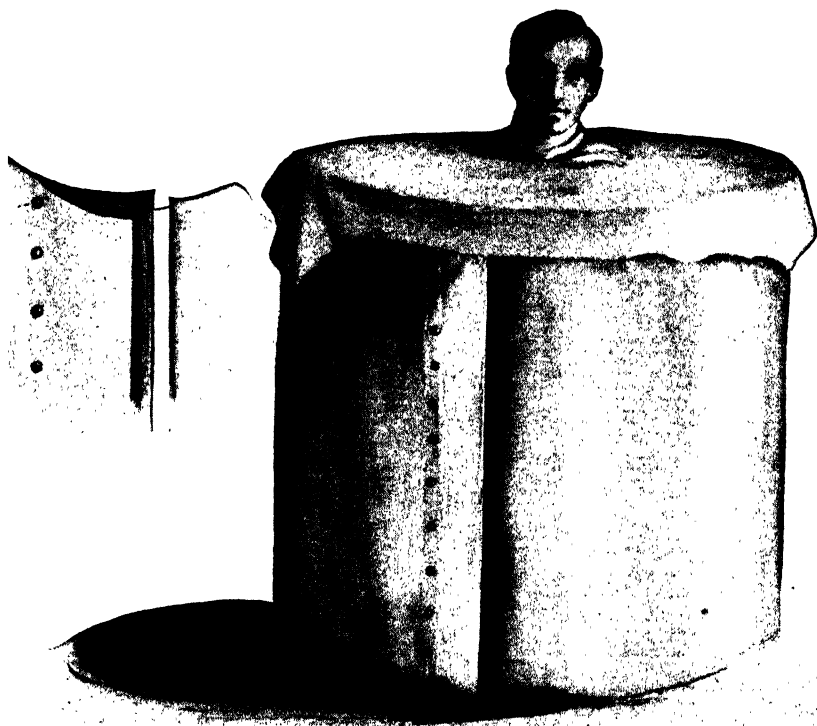
It is well to drink two or three glasses of water before entering the cabinet, and the feet of the patient should be placed in a small tub of hot water. The hot air varies in temperature from 100 to 180 degrees, sometimes as high as 200 degrees or more, and is produced by any suitable artificial means, frequently by means of an alcohol or gas lamp. It is well to place a cold wet towel around the head and neck while in this bath, which should continue until the whole body is in a profuse perspiration. On leaving this bath a warm or hot spray or douche of some kind should be administered, and then the temperature gradually reduced to not less than 75 degrees, and applied for from a half minute to a minute, until the body feels comfortable.

When possible, the hot air in this bath should not be too vigorously applied, to begin with; it is well to increase the heat as the body adjusts itself to it. This is easily done, if a lamp is used by getting into the cabinet when the lamp is lit, or soon after.

When it is necessary to continue the sweating effect of this bath, the patient can be wrapped up in warm blankets for half an hour or so, and the perspiration encouraged by the drinking of half a glass of water about every five minutes. It is very seldom that this bath is used alone, as its purpose is generally to induce perspiration. The sweating process alone does not eliminate all of the toxins of the body. It is good only as far as it goes, for the muscular system must be strengthened and the nerves toned up before all of the eliminative processes are as perfect as they should be.

The cabinet bath is an excellent way to break up a cold, because of the rapid elimination of waste matters; and similarly

it is of value in many other ways, because of its depurating qualities. It is somewhat of a strain upon those of weak hearts, and should be discontinued at the first signs of exceptional weakness or depression. In any event, it should not be continued over half an hour. For those who are overweight it is of service, though I would say emphatically that it can never take the place of vigorous daily exercise in the



An inexpensive and simple cabinet bath, for either hot-air or vapor baths. It consists of a single sheet of zinc, sheet iron or any other available sheet metal, bent in the form of a cylinder, with the two ends brought together, and the top provided by a piece of rubber sheeting, oil cloth, blanket, canvas or any other available material, leaving a space for the head to project. A towel should be wrapped around the neck for a snug fit. The patient sits upon a chair, and the height of the bath should be on a level with the neck of the patient when seated. It should be from three and a half to four feet in diameter. Any village tinsmith can make it at little expense, using a sheet of zinc or other material, eleven to twelve feet long. In order that the two ends may fit snugly together, it would be well to attach a little strip of the metal on one end, as shown in the diagram at the left, so that the edge of the other end may be inserted in the niche thus provided. Or if preferred, the edges of each end may be folded back in such a way that they may hook into each other when brought together. Those who have a furnace with a radiator in the floor can conveniently place the cabinet over the radiator for the source of hot air, otherwise an alcohol or other quick heating lamp may be used. If placed under a chair, the seat should be protected underneath by a piece of sheet metal. For the vapor bath place a small pan of water over the lamp.

open air either as a means of purifying the blood, of inducing perspiration or reducing flesh. For absolute internal cleanliness there is nothing like exercise and outdoor life, and measures of this kind are only substitutes at the best. At the same time, in some cases where radical treatment is required these baths may be used effectively in purifying the blood. And there are occasions, when one is over-fatigued, and incapable of accomplishing much through exercise, when a good, vigorous sweat is the one thing that the body needs. Under such circumstances a cabinet bath is of great value, though a hot water bath will often answer very much the same purpose. (See *Hot Water Bath*.)

A cabinet bath, like any other hot bath, is best taken before retiring. The body should not cool off too quickly.

If one does not have the apparatus for a cabinet bath, it is a very simple matter to improvise a sweat bath that will answer practically the same purpose. This is done by the use of a hot foot bath, immersing the ankles as well, and wrapping the rest of the body well with warm blankets. This will soon bring out the perspiration, but the effect is hastened and intensified by the drinking of hot water or hot lemonade.

A beautiful and well made wooden cabinet, with doors, will cost too much for many homes, but a suitable and simple device may be secured at little expense with the help of any tinsmith, using a sheet of zinc to form a cylindrical cabinet perhaps four feet in diameter and a height approximately that of the neck, when sitting. (See illustration.) This can be rolled up into a smaller space when not in use. This furnishes the side walls, the top being provided by rubber sheeting, oil cloth, blanket or any tightly knit fabric, with an opening near the back the size of the neck, that the head may project. This may be made to fit more snugly by a towel wrapped about the neck.

Showing how the Hot Air Bath Cabinet illustrated may be rolled up when not in use, taking up little space in the household.

FRICTION BATHS.—See *Dry Friction Baths*.

HOT BATHS.—Hot baths are in many respects just the opposite in their influence from the stimulating cold baths. Hot baths are inclined to relax the tissues of the body and for this reason they are invaluable in a great many ways. As a curative measure, the hot bath in various aspects is invaluable, but it may be used for many health-building purposes. It should usually be taken before going to bed and will generally be found a splendid remedy for sleeplessness. Another reason for taking it at this time, however, is the advantage of allowing the body to remain for hours afterward in its relaxed condition.

Hot water is always very soothing and is invariably effective for relieving pain. But its most marked and valued influence lies in stimulating the activity of the pores of the skin. It is such a powerful eliminant that by its means the skin may be made to do much of the work of the kidneys, and for this reason the hot bath has been found of great value in many forms of kidney trouble. Old persons also, with failing kidneys and otherwise imperfect elimination, will find the practice of hot baths an indispensable means of keeping the blood pure and the health good. It is true that hot baths are likely to prove depressing unless used carefully, and that as a general thing they are not to be employed without good reason. It is also true that the invigorating effects of the cold baths are to be preferred. And yet they are so very effective that they deserve all possible credit in many cases. In cases of catarrh which have proved extraordinarily stubborn, in skin eruptions and in other common manifestations of waste accumulations in the body, they will work wonders. I would suggest, however, that as a general thing they be not used more than three times a week.

For those who are very thin, who have poor circulation or weak hearts, the hot bath is inclined to be weakening and I would not recommend it. It will be most useful to those who are above normal weight and who can take it with-

out any special loss of strength. But even in such a case it should not be continued too long, a half hour being as long as could ever be advised, and usually half that time, or even less, being sufficient. One's own instincts may guide him in the matter to a very great extent, and as long as the sensation of immersion in the hot water (that is, as hot as can be endured comfortably), is gratifying and pleasant, then it is beneficial. But if one stays in the bath beyond a certain time, he will experience a sensation of great lassitude, weakness and weariness, and when this feeling begins to come on the bath should be discontinued at once.

As a rule it is best to get into the water at a neutral temperature, or about 95 degrees Fahrenheit, hot water then being added until the temperature is raised to a degree varying from 105 to 115 Fahrenheit.

Those who have special reasons for taking hot baths should also make it a point to take cold baths to invigorate the body at other times. For instance, a cold bath every morning will enable one to build vigor and hardihood while the three hot baths a week accomplish the other purposes desired. In a case of this kind it would not be necessary to take the ordinary warm baths with soap twice a week, which are otherwise advised for the sake of cleanliness. These hot baths will accomplish this result as well.

It is very important to avoid becoming chilled after a hot bath, but this is not likely if one goes straight to bed. One may take a cold sponge before leaving the tub or not, just as his needs and feelings may require. In most cases this cold sponge or spray should follow the hot bath, but if one desires the maximum of relaxation and the possibility of immediate sleep, it may be best not to use the cold water. There is not so much danger of becoming chilled after a hot bath as is popularly supposed, for the excess of warmth in the body will enable one to withstand a great deal. Still, it is well to be careful, and much greater benefit will be derived from the bath if the body cools off very gradually.

As a means of breaking up a cold, the hot bath is excellent.

It will answer the same purpose as a hot cabinet bath or any other means of inducing a profuse perspiration, and it will usually be found much more comfortable than the cabinet bath. It will serve pretty well as a household substitute for a Turkish or Russian bath, and may have the advantage of the latter in that one can provide for ventilation and fresh air in his own home, which invariably the public bath establishment does not offer. And as a means of taking the soreness and stiffness out of the muscles after over-exertion or strain, there is nothing like it.

Japanese Hot Bath. The hot bath is so much a national institution in Japan, and its benefits so marked among these sturdy and healthy people, that every one should know of their practice of it. It is a daily habit, taken at the close of day, and after the labors of the family are over. Usually the tub is outdoors in front of the little cottage, and the water is heated on a stove indoors late in the afternoon. When the master of the house comes home from his work the tub out in front is filled with the hot water and he gets into it. It is so hot that he takes on the color of the proverbial boiled lobster, and he scrubs and souses himself, with the help of his wife, until he feels that he is clean. Getting out of the tub, his wife takes his place, and after her the children, in the order of their age, until all are clean and red. The weak point about it all is that the entire family uses the same water, one after another, but this is only a matter of economy, and even so, the bath is effective. It is to be remembered that since this is a daily habit, not one of them is ever very dirty, either externally or internally. (See also *Warm Cleansing Bath*.)

THE HOT BLANKET PACK.—In old age and cases of extreme weakness it is sometimes inadvisable to use the cold wet sheet pack, and in such cases rapid elimination may be accomplished by a hot blanket pack, which is often more convenient and comfortable than a full hot bath. It will often prove useful in cases of chill. And there are other occasions where it is necessary to produce the sweating effect quickly. In such cases, instead of using the cold sheet a woolen blanket

wrung out of water as hot as the patient can bear should be used. Its effect is almost immediate, but great care must be exercised to not allow it to continue too long as it then becomes exhausting and depressing. As a rule, patients prefer it to the cold wet pack as it avoids the unpleasant cold shock, but the general effect of the hot blanket pack upon the body is nothing like as beneficial. (See also *Wet Sheet Pack*.)

HOT FOMENTATIONS.—The hot fomentation is simply a hot compress (see *Compress*), but instead of using linen cloths, folded flannel cloths should be used. In using the hot fomentation care should always be taken to allow the flannel to be large enough when properly folded to well cover the area to be affected. A common mistake is to make hot fomentations with too small a flannel. Whenever hot fomentations are to be applied, if the patient is occupying a bed, a rubber cloth should be placed under to prevent the bedclothes from becoming wet. When an abundance of hot water is provided, and a wringer is at hand, the flannel may be placed in the hot water and wrung out by the machine, but when no other appliance is available, it is well to place the flannel, after being dipped in hot water, in a large folded towel or cloth; it can then be wrung by twisting the ends of the cloth. When very hot water is used the cloths must be wrung thoroughly; otherwise, there is danger of blistering the skin of the patient. Before placing the fomentation upon the body, a rough towel, or a piece of dry flannel, should be placed next to the skin. In our own practice we have found the use of the rough Turkish towel wrung out of hot water to serve the purpose admirably. Care must always be taken, however, to see that it is not too hot when applied.

The attendant should rub his hand rapidly under the fomentation and feel if it is too hot for the skin. If it is too hot, a few movements of the hand in this fashion will cool it, or it may be lifted and waved in the air for a moment or two, to induce rapid evaporation. It is better, however, to keep it on if it can be borne, and cool it by use of the hand, if possible.

When great heat continuously is required, the fomentation will need to be renewed at the end of about every four or five minutes or at even shorter intervals. In some cases it is found sufficient to apply the fomentation and then cover the first cloth with a dry flannel, and then add a hot water bag which will help to maintain heat. In arranging the cloths great care must be taken that the surface is not dried by evaporation and the effect of the fomentation lost. In all cases the new hot fomentation should be prepared before the cooled one is removed. The hot fomentation is generally used in cases of great pain. Very hot applications lessen the sensibility of the nerves of the skin, and while the first effect is excitation the secondary effect is soothing. In all cases of acute inflammation involving the surface structures the fomentation may be used, and for the relief of severe pain it perhaps has no equal in all therapeutic measures. (See also *Compress, Alternate.*)

HOT FOOT BATH.—See *Cold Sponge, with Hot Foot Bath.*

HOT SPLASH. [See also *Cold Splash.*]—Although hot baths usually have the influence of relaxing the body, yet a hot splash may be taken in a manner that will stimulate and invigorate with much the same results as would result from a cold bath. There are perhaps some cases in which it would be more satisfactory.

It should be *brief* to accomplish this result. Three or four inches of hot (not warm) water should be allowed to run into the tub. Step in and sit down quickly, and then rapidly splash the hot water over the entire body for a few moments. This will bring the blood to the skin in large quantities, and you will step out with something of the exhilaration that comes with the reaction from a cold bath. The result accomplished is very much the same, and it is not continued long enough to bring about a reaction of chilliness, which otherwise might be the case. The body should be rubbed dry vigorously.

HOT WATER BAGS.—Hot water bags and bottles are useful in the same way as hot fomentations, and may sometimes

be used in connection with the latter. They are of value in relieving inflammation, in producing relaxation, and in accelerating the local circulation. Care should be used, however, that they are not too hot. The general remarks in regard to the application of *Hot Fomentations* will apply here.

INTERNAL CLEANSING.—By this is meant the introduction of water into any of the cavities of the body. The simple and natural mode of thus introducing water is by the mouth into the stomach by the process of drinking, and the advantages of giving the stomach an occasional bath of either hot or cold water have been demonstrated by the experiences of all ages.

In discussing the exclusive meat diet there will be found a presentation of the reasons for the use of hot water in the stomach. The water should be at a temperature of about 110 degrees Fahrenheit and should be taken from an hour to two hours prior to the meal, slowly sipped, from half a pint to a pint. In this way the slime and mucus that have accumulated are washed out of the stomach before another meal is introduced. At the same time the blood is able to take what extra moisture it needs to further liquify it. Those suffering from all diseases that arise from defective digestive processes will find the use of the hot stomach bath of great benefit. "It excites downward peristalsis, dilutes the ropy secretions of the body, dissolves all abnormal crystalline substances that may be present in the blood and urine, and everywhere promotes elimination. It supplies a foundation for the thorough treatment of all chronic diseases by an inside bath which cleanses and refreshes the entire system."

At many "hot springs" people are required to drink the waters at certain intervals, generally at 6 A.M., 11 A.M., 4 P.M. and 9 P.M. With the average person's superstitious belief in the advantageous effects of the mysterious substances that are supposed to be found in these waters, the benefits that occur are generally attributed to these minerals. In reality, however, it is the simple hot water that produces the good effect by the washing process before referred to.

There is but little doubt that hot water used internally is

of greater benefit in cases of disease and where the vitality is low than the use of cold water, but where it is necessary to reduce the temperature, two or three pints of water at, say, 40 degrees will cause a reduction from one and a half to two degrees within the short space of ten minutes. But it is not only by the absorption of heat that water-drinking lowers the temperature. It produces the same effect by diluting the blood and thus promoting evaporation from the skin and exciting the kidneys to increased activity, thereby aiding in the elimination of the blood toxins that are causing the fever. It is a good plan in almost all fever cases to allow the patient to slowly sip a glass of cool water every hour.

At many "cold spring" resorts the patient is required to drink large quantities of cold water, supposedly for the benefits that are derived from the ingredients in the water. Immediately after the drinking, a walk of greater or lesser duration is required, and whatever benefit the patient derives is naturally attributed to the medicinal virtues of the water. To those who are familiar with the principles of hydrotherapy, however, it will be self-evident that the improved health is attributable to the liquifying of the blood by the increased water-drinking and the tonicking effect of the exercise in the open air. These effects might be produced at home with equal measure if one would follow the same régime.

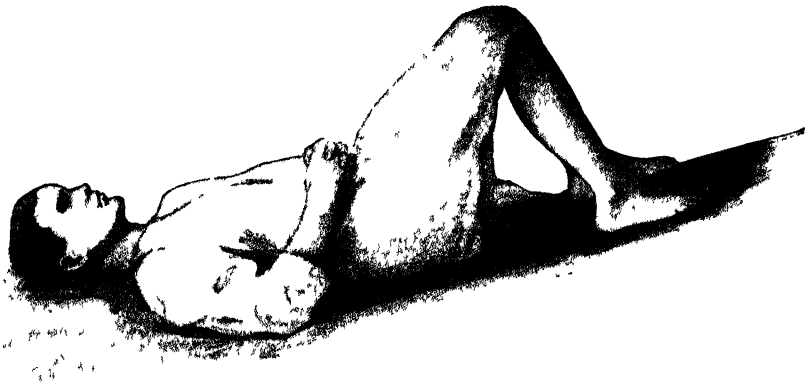
But where drinking is objectionable to the patient or for any reason inadvisable the same effect can be equally well produced by introducing water of any given temperature into the intestines by means of an enema or an injection.

INTERNAL BATHS.—There are several methods of taking the enema. Many people take it when seated upon the toilet. A complete irrigation of the colon cannot be secured in this position. The tube of the large intestine descends on the left side of the trunk towards the rectum, but by a wise provision of Nature, it forms a loop known as the sigmoid flexure immediately at the entrance to the rectum. This is for the purpose of preventing too great a pressure of the contents of the colon upon the rectum and the sphincter muscle of the anus.

When one attempts to take an enema in the sitting position, it is difficult for the water to pass this sigmoid flexure and frequently the rectum alone is affected. If rectal irrigation is all that is desired, this is sufficient, provided no attempt is made to inject too large a quantity of water at the time. If, however, one is ignorant of the existence of the sigmoid flexure and supposes that by forcing the water into the rectum it can thus be made to enter the intestine, and the water used is warm or hot there is great danger that dilatation of the rectum will occur, which may have injurious after effects.

Some people are in the habit of taking an enema while lying on the right side. In this position the water is compelled to arise against gravity around and through the sigmoid flexure. Complete flushing of the colon is, therefore, practically impossible in this position. Indeed, it is doubtful whether when one lies on the right side and takes an enema the flexure itself is ever properly cleansed.

If the patient reverses his position and lies upon his left side, the condition is slightly improved, although the transverse colon now becomes a perpendicular tube through which it is impossible to make the water go without the expenditure of an amount of force that is dangerous.

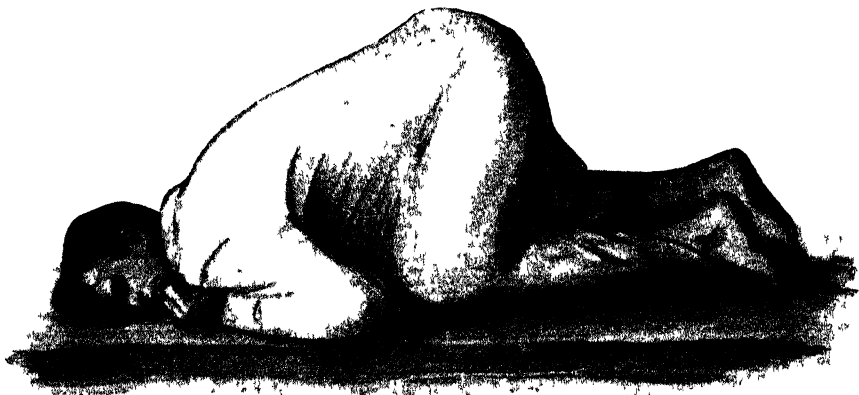


Proper position for an invalid to assume when taking a full enema. The patient's hips should be raised about a foot higher than the head. This position can be used when too weak comfortably to take the knee-chest position. An ironing board may be used for the purpose with one end raised upon a chair or side of the bed. If the patient is in bed, the foot of the bed or couch should be raised.

Experience, therefore, demonstrates that there are but two methods by which a complete flushing of the colon can be secured. In the first of these for very weak persons, the patient lies upon his back with his hips slightly raised. If, before a sufficient amount of water has been introduced, the patient feels a strong desire to expel the water, he should be urged to resist the impulse, and the attendant should aid him by pressing a napkin tightly against the anus for a short time until the desire is controlled.

The most satisfactory position and the one I recommend to all except the bed-ridden, is the knee-chest position. The patient kneels upon a bed or table and then leans forward, resting the chest upon the hands or elbows upon a cushion or on the table, or in any other position that will project the buttocks in the air and keep the head down.

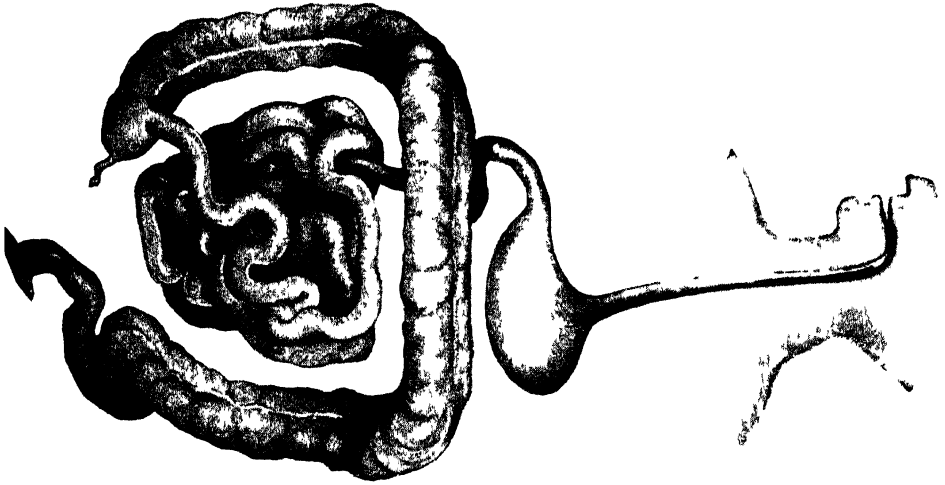
This attitude is both comfortable, easily assumed, and gravity assists the water in its flow through the descending colon and across the transverse, and, if a sufficient quantity has been injected, a certain amount will flow by gravity into the ascending colon as soon as the patient assumes the upright position. Anyway, this will fill naturally if enough water is used, for, seeking its level, it will rise in the ascending colon as the descending colon becomes very full. This is also largely true of the position on back with hips raised. In this manner, practically the whole of the large intestine is reached.



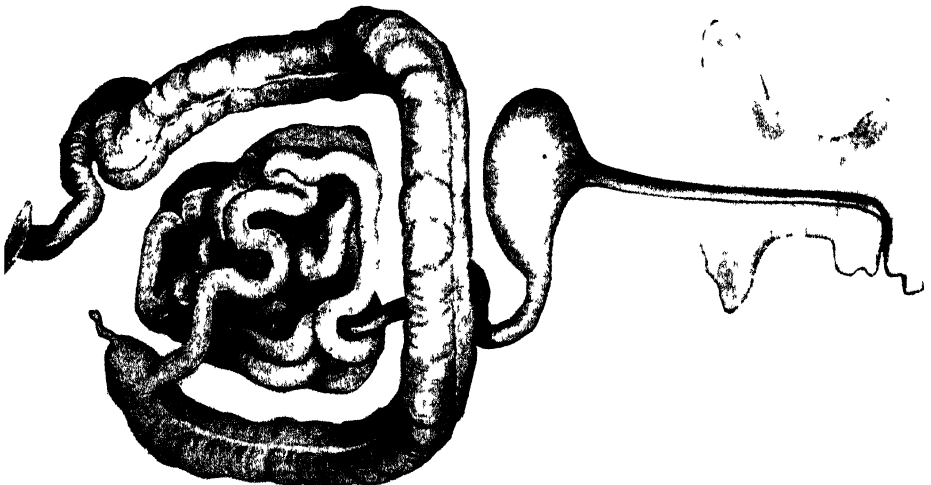
Knee-chest position. This is by far the best position to assume when taking an enema. As will be seen by cuts of alimentary canal, on page 1457, the water will flow more easily to all parts of the colon, while in this position than in any other.

When the patient assumes this knee-chest position, from four to six pints of water, and even more, may be injected without inconvenience or injury. This complete filling of the colon is absolutely essential to its effective cleansing.

The simplest method of taking the enema is to have a table



Showing the position of alimentary canal when lying on the left side, the proper position for taking an incomplete enema, when only the rectum and descending colon is to be cleansed.



Showing position of alimentary canal when lying on the right side. The proper position for taking a full enema, as shown on another page, is the knee-chest posture. If for any reason this cannot be assumed, then lie on the right side, hips elevated.

or bed close by the wall where the fountain has been suspended. The patient assumes the correct position. A little vaseline or olive oil is applied to the hard rubber rectal tube before it is inserted in position. Do not insert the tube until enough of the water has been run out to expel all air and also to reach the proper temperature. If the water comes too rapidly, the flow may easily be regulated by the clip shut-off or by pinching the tube between the fingers and thumb.

Sometimes one will experience a griping sensation or a little nausea, but this will soon disappear if the flow is arrested for a little while. Naturally, as more water is taken in, a sense of fullness will be felt. If this is oppressive, arrest the flow for a while and as the water finds its way into the farther recesses of the intestines, the sense of fullness will disappear.

It is advisable to retain the knee-chest position for a little while after the reception of the complete flow of water.

In most ordinary cases the enema is taken at the temperature of the body, viz., at about 98 degrees. My experience, however, is that a slightly cooler temperature is more beneficial. The best temperature will generally be indicated by the condition of the patient, and the purpose for which the enema is to be used. Where there is low vitality the hot enema (104 to 115 degrees) will often act as a powerful and yet simple stimulant and do far more effective work than with water ten degrees colder. A widely known hydrotherapeutic authority writes of the relative merits of the cold and warm enema:

"The warm enema soon loses its efficiency because of its relaxing effect upon the intestines. The tone of the muscular walls is gradually lessened from day to day, until the bowel may become enormously stretched. Large quantities of water should never be used, as they overstretch the bowel and produce atony. Three or four pints is the limit for a daily application. The colon will hold a considerable quantity more than this, but should not be stretched to its full capacity under the relaxing influence of the warm water. The introduction of cold water into the large intestine is entirely free from

this objection. Half a pint or a pint of cold water may be employed daily without injury, for the reason that the cold water energizes the muscles and nerves of the intestine. In the ordinary use of the enema, the temperature should be (80 to 70 degrees)."

There is good reason for the caution expressed by this authority in regard to daily warm enemas, and especially among those in fair health, but this should not be taken as advice against the use of a complete, full, hot enema in those emergencies in which it is truly beneficial. The enema should really be regarded as a special treatment, and not as an everyday matter for those in health. One should not learn to depend upon this measure, for such vigor and functional tone should be established and maintained that the bowels may be kept in good condition under ordinary circumstances without such help.

The hot enema has also been found of great benefit in cases of infantile diarrhœa, bilious cholic and in soothing uterine pains during parturition, and the irregular contractions that sometimes occur after child-birth. Many a case of collapse or of conditions where the skin is pale and the pulse weak, has been materially helped by the hot enema. In cases of this character it is often advisable that a cold friction rub be given briefly and speedily to the whole body, immediately after.

In cases of the suppression of the urine, or in renal difficulty or inflammation, the hot enema is of greater value than the warm, the hot water being more readily absorbed because of the increase of blood pressure and acceleration of the heart action. Many persons suffering from renal suppression have had their lives saved by the repeated employment of the hot enema during periods varying from one to three or four hours, but it must not be forgotten that the temperature must not be below from 110 to 120 degrees.

But the enema is not only useful for its commonly accepted purpose of flushing the large intestine. It has other uses and benefits which should be thoroughly understood.

The rapidity with which water is absorbed from the colon is indicated by the copious discharge of urine that immediately follows the use of the enema. This is a clear indication that the processes of elimination, by means of the kidneys, are being aided. At the same time the blood vessels also take up a quantity of the water and are distended and stimulated to more perfect action.

In cases of fever the cold enema is of the highest value. It not only helps to reduce the temperature, but by stimulating the action of the kidneys and the skin, aids in the process of elimination of the cause of the fever. In such cases as typhoid fever (see also *Brand Bath*), the cold enema should preferably be used. For not only does it cleanse the alimentary canal, but it reduces the temperature and encourages the action of the liver, kidneys and skin, all of which are most desirable results to obtain.

In cases of inflammation accompanied by great pain in the pelvic region, hot enemas are of the greatest value. The water should be at a temperature of 110 to 120. In cases of painful menstruation or ovarian difficulty or prostatic inflammation, the effect of hot water is generally immediately apparent, and, combined with the fast, is of the highest value.

In cases of threatened collapse, in typhoid fever, cholera, and yellow fever, in which life is threatened by the absorption of the poisons the disease is endeavoring to eliminate, the hot enema is of inestimable value, especially when accompanied by the fast.

The enema may be given: 1. Cold. 2. Warm. 3. Hot. And there are practically three kinds of enema that may be administered, namely: 1. The simple rectal irrigation, with cold, warm or hot water. 2. The irrigation of the large intestine which must be administered under expert direction and with great care. 3. The full enema of the large intestine.

In administering an enema, except under expert advice, one should never use anything but absolutely pure water. Soapsuds, salt, soda, or other additions should be positively,

refused. They are unnecessary, as the water does the work most effectively, and there are times when these foreign substances cause unnecessary irritation and even danger.

While there is unquestionably some danger to be apprehended from the injection of too large a quantity of water, especially when used warm, the danger is practically nullified by the effects of the fast. It should be self-evident that the amount of water to be injected should be limited to the natural capacity of the patient, for any attempt to force into the body an excessive quantity of water might produce injury that would take some time to cure. It must also be remembered that the usual caution about warm water losing its efficiency because of its relaxing effects upon the system is practically nullified by fasting. But I would have it distinctly understood that I am not an advocate of too large enemas or their too frequent use.

Where warm water has been used and a discharge has ensued the processes of elimination will be further aided by following it with the injection of about a pint of water from about sixty to seventy degrees which, if possible, should be retained. The effect of the cold water is to stimulate and tone up the muscular tissue of the colon, thus increasing the activity and energy of the nerve centers controlling the muscles.

Lavage is an irrigation of the stomach by means of a double tube, one to introduce the water from an elevated source, the other to serve as an outlet. It is of special use in cases of poisoning and extreme cases of catarrh of the stomach. It is not convenient for home treatment, however, since it requires the special apparatus. In most cases of emergency an emetic is much quicker.

THE MASSAGE DOUCHE.—This form of bath is sometimes called for where there is exceeding sensitiveness to cold, and yet the stimulating effect of the cold douche is required. The massage simultaneously with the application of cold water materially mitigates the cold effect and this bath, therefore, is found most effective in producing the desired results, and at

the same time trains the patient to a lesser susceptibility to colder applications. It is especially applicable to the back and limbs and the abdomen and where the joints are stiffened by chronic rheumatism, it is very beneficial. The kneading of the massage and the mechanical effect of the jet combine to produce results far deeper in the body than those that are produced by either when taken alone. It can be used cold, neutral or hot as the state of the patient indicates.

MUD BATHS.—This is a form of treatment to which a certain school of European hydropathic or “Nature cure” enthusiasts are much devoted, and it must be said that these mud baths have a decided value in many cases as a means of eliminating the wastes of the body and thus overcoming disease. As to whether it is really the best treatment, however, there is some doubt owing to the fact that the air is thus excluded from the body. A wet sheet pack is much more convenient, much cleaner, and probably more effective in most cases.



Method of applying a mud pack. First a layer of wet mud, then a bandage or wrapping of any available cloth.

Wet clay is usually used, where it can be obtained, in place of ordinary mud or wet dirt. Dry sand is also considered valuable, the idea being simply to bury the body of the patient in the ground with his head left out for the air. The sand is not nearly so effective as the wet clay or mud, although when the sand is well heated through by the sun it warms the body and stimulates perspiration. In the use of mud and wet clay baths it is absolutely essential that they be sufficiently warm

to insure the comfort of the body. Prolonged burial in cold damp earth will have the effect of chilling the body too much and greatly reducing the vitality. The treatment, therefore, is only suited to the warm summer months.

There is another important consideration to be kept in mind in the use of mud baths, or at least one which is important in many cases, and that is that the soil used should be the natural soil of a locality free from the taints of civilization. In other words, one should go far into woods where the earth is pure and not contaminated in any way. It is true that in a fit condition one need not fear this contamination, but at the same time it is just those who are so diseased and reduced in vitality as to need such special treatment who might possibly suffer from infections derived from impure soil. The slapping of mud packs upon open wounds or sores, as recommended by some of these enthusiasts, is not to be advised unless there is absolute certainty that the earth is pure. I have seen trifling wounds become dangerous through infection in this way, leading to weeks of suffering when they should have healed in a few days. On the other hand, where the skin is unbroken, local packs of mud are often very effective in relieving pain from rheumatism, strain or bruising. Yet for relieving pain in such cases, hot wet cloths (See *Fomentations*) will act far more quickly and certainly, or sometimes cold compresses, being also cleaner and more convenient.

NATURE BATH.—This is the name somewhat ar-



Attendant applying damp clay to back.

bitrarily bestowed upon a form of sitz bath much practiced by a school of Europeans. There is no good reason why this particular form of bath should be singled out for the rather pretentious title of "Nature" bath, but it unquestionably has its value in many cases. The most *natural* bath would seem to be the plunge, although the shower of a natural rain may lay claim to the same distinction. The name of *Nature Bath* was given to this form of sitz bath for the apparent reason that its originator had observed that some animals are accustomed to "wallow" or rub their abdomens in the mud of shallow water.

The method of taking this bath, accordingly, is to sit in a bath tub in cold water about three and a half inches deep, thus partly immersing the hips and the feet altogether. While sitting in this water the bather splashes the water up over the abdomen, rubbing the abdomen and the groin with the hands. It is a very satisfactory form of bath, but in many ways the regular cold sitz bath described in another paragraph, is to be preferred. In the case of the regular sitz bath the reaction is more powerful and the result more invigorating, while owing to the fact that the extremities are kept out of the cold water it is much easier to recuperate from with warmth. While this consideration may not be applicable or necessary in many or even most cases, yet it is an important one for those of poor circulation and reduced vitality. For overcoming sex weaknesses this *Nature Bath* may be commended. (See also *Cold Sitz Bath*.)

NAUHEIM BATHS.—The Nauheim bath treatment has been found very valuable in cases of heart disease and consists of a saline and carbonic acid bath. These were originally given at the Nauheim Springs, where the waters are naturally saline and gaseous. These baths act as mild irritants of the peripheral nerves, causing first contraction and secondarily dilatation of the blood vessels, first the surface and then the internal. The result, apparently, is to so diminish the strain upon the heart that it secures a degree of rest, resulting in better nutrition and increased metabolism.

They are commenced with a small percentage of salt and a very small amount of carbonic acid, first lasting eight to ten minutes and at a neutral temperature, 92 degrees to 95 degrees F. The temperature is then reduced one degree each day until 80 degrees Fahrenheit is reached, also gradually increasing the saline and gaseous strength of the bath. Artificial Nauheim baths may be administered in the patient's home, using only porcelain or wooden, never metal lined tubs, using ordinary table salt, bicarbonate of soda and a few ounces of hydrochloric acid.

These baths should not be attempted, however, except under the personal supervision of one thoroughly versed in their technique. As we shall see elsewhere, however, the heart can be benefited and strengthened by other hydrotherapeutic methods of a more simple kind.

THE NEUTRAL BATH.—This bath receives its name from the fact that it is neither hot nor cold, but warm, near (just below) the temperature of the body itself. The temperature should be from 92 to 95 degrees Fahrenheit, and the bath tub should be so filled that one can lie comfortably in it, the whole body being covered up to the chin. It is of especial advantage to those whose occupations and professions call upon them for great mental activity with very little exercise of the muscles. One may remain in this bath from fifteen minutes to two hours, as is most agreeable, and if taken just before retiring, it will be found to have a most soporific effect, often inducing sleep when every other means has failed. No harm will come from the use of this bath even though continued daily for a long period, provided the cold morning bath is used with equal regularity, and the body is well nourished. Continued immersion in this bath is advised in cases of severe burning or scalding of a large surface of the body. It is the most soothing and satisfactory treatment in such cases.

OPEN-AIR BATHING.—The various other forms of cold water bathing discussed in this chapter are only substitutes for the oldest and most natural form of bathing, which con-

sists of plunging joyfully into the generous bosom of a river, lake or sea. In temperate latitudes this is not possible at all times of the year, but this is all the more reason why we should avail ourselves of any opportunities for open-air bathing which we may have during the summer months. For the small boy there is nothing like the lure of "the old swimmin' hole," and for all those who retain any traces of their youth through their adult years there is no other physical pleasure which is quite like the robust delight of splashing and sousing oneself in the cool and refreshing open-air waters.

Happy and fortunate are those men and women who live near enough to such conveniences as to take daily advantage of them. Where proper privacy can be observed, the less clothing one can wear in these outdoor baths, the better. There is a moral and mental as well as a physical tonic effect that comes from the exposure of the whole surface of one's body to the air. While it may be necessary to restrict the use of abbreviated bathing suits at public seaside resorts, the effect is exactly the contrary where one may bathe in satisfactory seclusion. There the nearer to absolute nudity the more perfect the bath.



A happy group enjoying the pleasures of salt water bathing, the most ideal relief from the congestion and stifling summer heat of a large modern city.

Here are a few general rules which should always be observed by the sea or fresh water bather.

1. Never bathe when exhausted physically or nervously, or when the vitality is low through loss of sleep or any other cause.

2. Never bathe within an hour after or before eating a meal.

3. Where possible, enter the water quickly. The longer the sensation of shock is prolonged, the less benefit does one derive from the reaction. Get the chest and shoulders covered as speedily as possible. The best way is either to dive in or to run forward as far as possible and dive headlong into the first breaker that comes. In other words, make it a "plunge."

4. One naturally feels a chill on entering water at a temperature lower than the body. After this first chill, however, there is generally a speedy reaction. As soon as the body begins to experience a *second* chill, leave the water immediately, as the power to react after a second chill is much reduced.

Fresh Water Bathing. In the nature of things only a limited number of people are so situated that they can enjoy the pleasures of salt water bathing, but through the kindly provisions of Mother Nature there are few localities in which men dwell where there is not somewhere in the neighborhood a stream of water or lake. Fresh water bathing is nearly as satisfying and pleasurable as bathing in the ocean, and there are some who even prefer it. There is one advantage in the fact that fresh water bodies are usually warm enough for bathing with comfort much earlier in the summer than the sea.

The general principles which I have outlined for successful results with other forms of cold bathing may be followed in bathing in the open air. There is the same necessity for perfect recuperation and for normal warmth of the body before entering the water. When you see a group of bathers shivering and talking through chattering teeth, you may know that they are not being benefited, or that they have been in

the water too long. If you feel chilly before reaching the water, it will probably be best not to go in. Sometimes the reaction from a cold plunge will warm one through and through even in such a case, but one should be sure that this will be the case before attempting it, and it would be wise not to linger in the water after getting this reaction.

The temperature of both the water and the air are to be considered for good results and the real pleasure of the bath. If you find the plunge and the swim a source of comfort and delight, then it is good for you. But if you dread to "duck" and get wet, and if the entire bath seems a hardship, then you should either cut it short or keep out altogether. In many cases where the water is warm enough, a cold condition of the atmosphere makes it much harder to keep warm or to recuperate. Sometimes on a raw and chilly day this is sufficient to make it unwise for the delicate man or woman to take the open-air bath at all, though naturally one who is vigorous need never hesitate on any such account. As I have said elsewhere, there are some who can enjoy a dip in a lake or sea all the year round, but this cannot be advised for every one.

The colder the water, the shorter the period of time that one should remain in it. These remarks are intended for the average man and woman, as will doubtless be understood. The athlete will know his own limitations in the matter. As a rule, nearly every one, from the school-boy to the middle-aged woman at the seashore, stays in the water much too long to get the best results. One should leave it when he still feels that he could enjoy remaining there for another hour. Half an hour is plenty of time to stay in the water on a summer day when both water and air are balmy. When either the water or the air is cold, the time should be shortened. A ten-minute bath that does one good is far better than a bath of two hours that leaves one weak and trembling the rest of the day. While taking the bath or the swim it is well to stay in the water all the time until ready to dress, for exposure to the air when wet will chill you much quicker than immersion. **Basking in the sun and covering with sand, which usually**

"feels good," and keeps one warm, may be recommended just so long as it is enjoyed.

Salt Water Bathing. The salt of the seas has a certain tonic effect which is lacking in fresh water bathing, and a dip in the ocean is especially to be recommended for this reason. It is, indeed, a fairly good plan to buy a supply of sea-salt for use in the bath tub at home, in connection with the morning cold tub, if one employs this form of cold bath. The suggestions which I have offered in regard to fresh water bathing will apply here as well, although I would add that one can usually stay in the salt water a little longer, with benefit, than in the fresh water. The heat of the body is not rapidly dissipated as in the latter case. A very good plan for a swimmer, however, or for anyone who is compelled to be in the water a long time, is to have the entire body rubbed very thoroughly with olive oil. This will protect him against losing too much of the warmth of the body, and in impure waters would likewise offer protection from any contamination which might be present.

For true exhilaration, however, I would especially recommend bathing in the surf. There is nothing else so stimulating in the way of a bath. Fighting the heavy surf and being buffeted about, perhaps rolled over and over by the mighty and resistless force of a breaker, splashed and soused and tumbled about—this indeed awakens every living cell in the body, arouses a new sense of life in every fiber and seems to impart to the vital organs some of that restless power which surges in the rolling billows of the sea.

Swimming is a delightful form of exercise in which bathing and exercise are combined. But since it is a valuable exercise for developing the strength and symmetry of the body, and is not an essential part of bathing for the sake of health, it is taken up for discussion in another place, among outdoor sports and exercises, in Volume II. Artificial respiration is taken up in the same place.

PACKS.—See *Dry Pack*, *Wet Sheet Pack*, *Dripping Sheet*, *Evaporating Sheet*, *Hot Blanket Pack*.

PERCUSSION DOUCHE.—See *Douche*.

PLUNGE.—See *Cold Plunge*.

RECUPERATION.—As will be seen from my remarks upon the general subject of Hydrotherapy and the conditions under which cold baths are beneficial, it is the reaction from the cold water that is the important factor in the invigoration of the body. If one does not recuperate properly and perfectly, then the bath will weaken instead of strengthen. It is better not to take the bath under such conditions, but if one has already done so and finds himself, as it were, enduring a lasting chilliness, then he should adopt special measures for bringing about a satisfactory recuperation.

For this purpose it is generally best not to depend upon artificial means, like blankets warmed over the radiator, for these will probably only intensify the sense of chilliness after their immediate warmth has passed away. The only way to recuperate thoroughly and properly is to increase the natural warmth of the body itself, and this requires an improvement

in the circulation. To accomplish this, the one most perfect and absolutely satisfactory method is active exercise. Do not try to regain warmth by closing up all windows, and shutting off the supply of fresh air, for the more pure air you can breathe under such circumstances, the more vitalizing oxygen you can secure, the more quickly you will regain



Massaging the chest after the bath. Massage helps materially in improving the flesh and the texture of the skin, also assisting in recuperation.

perfect warmth. It is much better if the room is cold, to keep the windows open and to put on a little more clothing so that you will not suffer from any chill in the air while you are endeavoring to regain your natural body warmth through the exercise. Rubbing, of course, is always effective, just as is any other form of massage, since it accelerates the circulation in any parts subjected to the treatment.

There are some who through anemic and nervous conditions are particularly susceptible to cold, and who find that while their exercises use up their nervous energy and give them strength, yet they do not get warm so quickly as those of more robust and full-blooded types. Sometimes, suffering from the depressing effect of an injudicious cold bath, those in this delicate condition find that they would have to exercise to the point of nervous exhaustion before they could become satisfactorily warmed through this method, at which point their over-exertion would make the situation worse than before. The greater one's weakness, the greater the difficulty in this direction. However, if one is chilled after a cold bath, it is absolutely necessary to get warm, and the sooner the better. Moderate exercise should be combined with other measures; for instance, the drinking of hot water or hot lemonade, and perhaps the addition of clothing. Mere warming the feet by external heat is scarcely satisfactory, but after enough exercise to arouse a vigorous circulation, such warming of the feet will be of advantage. When convenient, a hot foot bath, combined with wrapping up well and the drinking of hot lemonade, might be suggested if the case is serious and the person too weak to depend upon exercise. Indeed, complete immersion in a warm bath, a little above blood temperature, and continued until bodily comfort is regained, would be effective, but like the hot foot bath and other external applications of warmth, should only be used as a last resort. Wherever possible, one should depend upon internal warmth generated by exercise, breathing pure air, and perhaps vigorous rubbing. In most cases, active and prolonged rubbing with the rough bath towel will bring about perfect recuperation.

Simply remember that the one essential thing after a cold bath is warmth. Our natural instincts for comfort in this direction must not be outraged. Cold air, coming directly in contact with the unclothed body, is powerfully invigorating, but only so when the body is able to keep warm. Even a severe chilling under such circumstances will have no effect, or at most very little effect, upon one who is very strong and vital, but one of limited vitality should not voluntarily undergo prolonged shivering.

The best guide usually is to be found in the question as to whether or not the hands and feet are warm. Every one should aim to have the extremities normally warm under all conditions. You may know that the circulation is all right if the hands and feet are warm.

RUBBING. See *Wet Hand Rubbing*, *Wet Sheet Rub*, *Cold Towel Bath* and *Dry Friction Baths*.

THE RUSSIAN BATH.—The Russian bath is practically the same as the Turkish bath, except that hot vapor or mist is used instead of hot air. The Indians of North America have used this bath from time immemorial (See *Sweat Bath*), though perhaps it would be more correct to say their sweat bath is a combination of hot air and steam. A willow frame is erected and covered with skins and blankets, in which the patients sit. Several red hot rocks are placed in the sudatory until sweating is thoroughly induced. More hot rocks are put in at intervals, and then water is poured over the hot rocks and steam vapor is thus produced. The Indians generally follow this bath by a plunge and a rub down with mud, lying out in the open air, exposed to the sun's rays until the body is thoroughly cooled.

The general effects of this bath in the modern institution are about the same as the Turkish or hot air bath, though in cases where the heart is weak it is well to avoid it. In all cases of chronic rheumatism and uric acid poisoning the Russian bath is exceedingly useful. It also affords great temporary relief in cases of acute bronchial catarrh. The steam or Russian bath is not so enervating as the Turkish bath, and

can usually be taken occasionally with benefit by those who are under normal weight. There are some objections to both the Russian and Turkish baths which are referred to briefly in the discussion of the latter. (See *Turkish Baths* and *Cabinet Baths*.)

THE SALT GLOW.—For this purpose a sufficient quantity of medium fine salt is put in a bowl and covered with water. The patient is then rubbed down, beginning with the chest and proceeding over the whole body as in the *Wet Hand Rub*. The temperature of the room must be sufficiently warm, and it is well for the patient to stand in a foot tub with water at 104 to 110 degrees. The vigor of the rubbing will largely depend upon the temperament of the patient, and his feelings must be considered by the attendant. If necessary this bath can be taken either sitting or in bed, though it is better to give it when the patient is standing. The salt glow must never be given in any case of skin disease, or when it produces skin irritation.

SEA BATHING.—See *Open-Air Bathing*.

THE SHALLOW BATH.—This bath, as its name implies is taken in a tub partially filled with water. Before bath is taken the patient must be well warmed throughout either by the application of hot water bags in bed, or by a full warm bath. He then seats himself in the tub, allowing the water to cover the legs and begins a vigorous rubbing of his arms, chest and abdomen, while the attendant rubs his back and sides with both hands. This is done for twenty seconds. The attendant then dips water from the tub and dashes it upon the back of the patient for ten seconds. The rubbing is then continued for twenty seconds, after which the patient lies down while the attendant rubs the legs ten seconds. So far this bath has occupied just one minute. If the bath is to be continued for two or three minutes, the procedure is repeated as required. But it is imperative that at one minute intervals the patient shall lie down in the bath so that the whole of the body except the head is submerged, the attendant vigorously rubbing his legs in the meantime.

When this bath is used for tonic effects, the temperature of the water should be from 65 to 75 degrees and the length of the bath from one to three minutes. When it is used for the purpose of reducing temperature, the water should be from 70 degrees to 85 degrees and the duration from 6 to 15 minutes. The adjustment of the temperature is an important matter, for if it is too high, the skin is left in a pale relaxed condition. If too low, there may be inability to produce reaction and thus the tonic effects be lost.

The depth of the water in the shallow bath should not be more than six inches, so that the rubbing is not interfered with.

In certain cases the effect of the bath can be enhanced if there are two attendants, one rubbing the legs and the other the sides and back. With a fairly vigorous patient, this bath may be taken alone, the effect of rubbing the back being produced by taking a cold wet towel and sawing up and down the back the length of time required. Taken in this fashion, it is a most invigorating daily bath for the healthy which can be used with good advantage instead of the cold shower or full bath.

The same kind of bath may be taken standing, the water in the foot tub being from 75 to 80 degrees. The water is poured over the spine, chest and shoulders at intervals of 15 or 20 seconds. The rubbing should be vigorous and the hands of the attendant dipped in the water.

In concluding the bath a pailful of water from 60 to 65 degrees should be poured completely over the body, followed by the usual brisk rubbing and quick drying. Moderate exercise should then be indulged in, out of doors if possible, until good reaction is secured. The best time for giving this bath is when the body is thoroughly warm in the early morning after a good night's sleep. For it is essential, if this bath is to have the desired effect, that the patient's body be thoroughly warmed through before it is administered. When a douche bath can not be secured this bath can be used instead, though it is not by any means as effective.

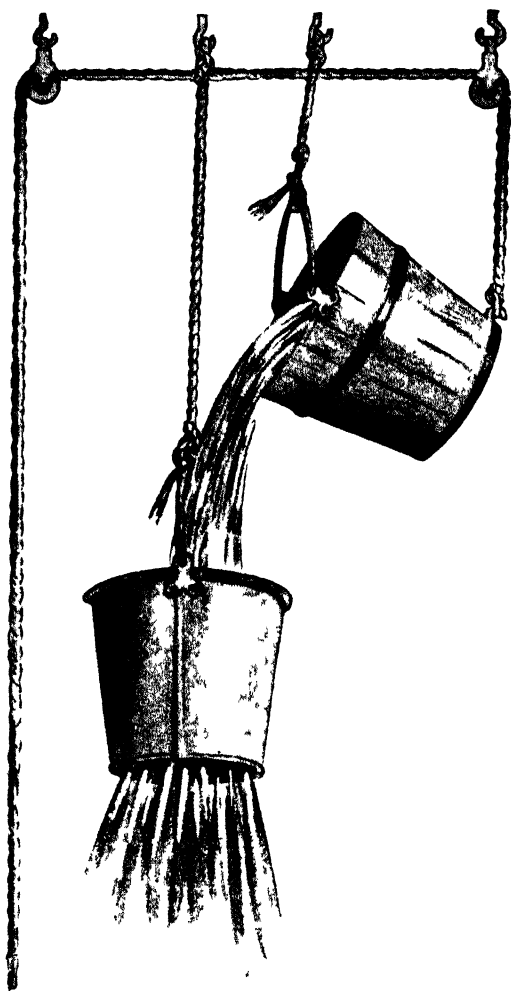
SHOWER BATH OR RAIN DOUCHE.—This is one of the most popular of modern forms of cold bathing. It has the advantage of requiring less space than a large tub and also demands less water to accomplish the same results. It may therefore be preferred in an institution where it is desired to provide baths for a great many people. The cold shower is very exhilarating and bracing. Some find it more rigorous and more difficult to respond to than the cold plunge, with water of the same temperature, but it is quicker to get into and out of, and is altogether a most satisfying method. For the athlete, who requires merely a quick rinsing off with the

cold water after his exertions on track or field, it is to be preferred, though in many cases he will do better first to rinse off with warm water.

The shower bath is so universally known as scarcely to need explanation. The water is conveyed to a perforated disc which breaks up a column of water into a number of fine streams which descend like rain, hence the name. The same effect may be produced by a movable hand jet and it is then called the *hand spray*.



Illustrating the use of a lateral oblique shower, one of the most satisfactory forms of the regularly installed shower or spray. It enables the bather to enjoy his shower bath without getting the hair wet, and for this reason will be much appreciated by women. Some modern bath rooms are equipped with this arrangement, but it can be installed anywhere at comparatively little expense. If placed over the ordinary bath tub, a curtain of muslin or linen may be suspended above and around in the bath tub to prevent splashing the rest of the room. It is not necessary to go to the expense of rubber sheeting for this purpose. A bath mat could advantageously be used to prevent slipping on the porcelain bottom of the tub. Slipping in a tub is dangerous.



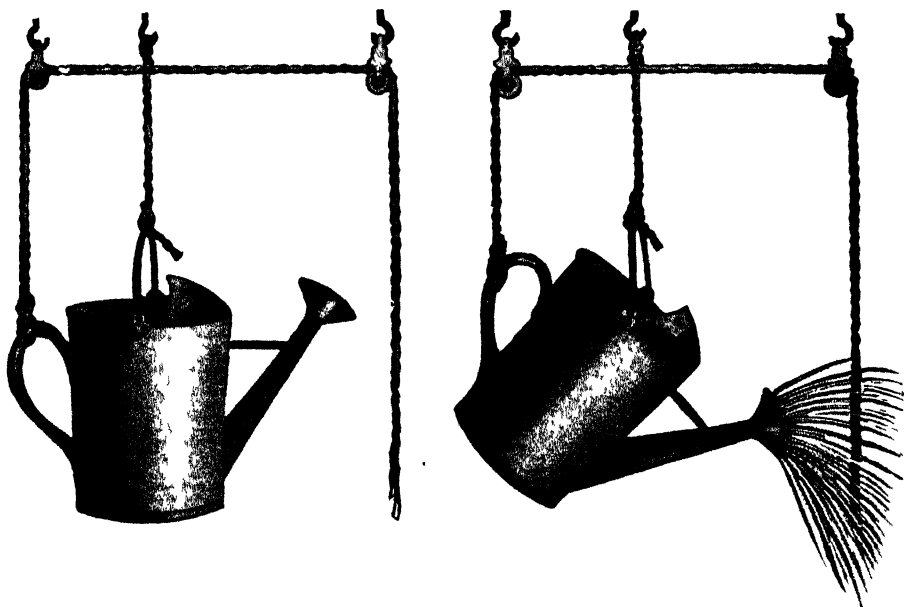
This is probably the most satisfactory and simple of all home-made shower baths, constructed by means of a couple of pails. The bottom of one pail is punctured with a small nail in many places, to provide the spray or shower. Another pail is suspended just above and a little to one side, as in the illustration, this being filled with the water for the bath. Another cord or light rope is fastened to one side of this upper pail, close to the bottom, either by means of a hook or screw eye in the case of a wooden pail, or by a band around the pail, close to the bottom if it is made of sheet metal. This passes up over a couple of pulleys and then conveniently down to the hand of the bather. One pulley or even a hook would answer if necessary, but the two pulleys, as illustrated, work better. By using a second upper pail, one on each side of the lower pail, it will be possible to have a warm shower first and a cold shower immediately following, by filling one pail with cold and the other with warm water of the desired temperature. See description of illustration of the "garden sprinkler" shower for suggestions in regard to drainage of water.

The same general principles apply in the use of the shower bath as to the use of the horizontal douche. The quantity of water falling at each instant and the amount of surface exposed to contact with the water being greater, it is a somewhat more vigorous form of cold treatment than the horizontal jet; yet, the pressure being less, the reaction is less prompt, so that in cases of low vitality, all necessary precaution must be taken to insure perfect reaction.

The shower disc should not be placed more than two or three feet above the head of the patient. The cold shower falling upon the most highly sensitive portions of the skin causes a tremendous rush of nervous impulses toward the spine and brain. The result is a number of reflex actions are powerfully set up. The

first effect is almost to inhibit the powers of breathing. The heart is powerfully excited, the blood pressure raised and the brain and nervous system are greatly aroused. Except in cases of vigorous vitality, it is well to begin the shower bath by first allowing the water to fall upon the feet, holding first one foot and then the other to receive the falling water, then the hands, arms, shoulders, and back should be exposed, and finally the chest and abdomen. In cases of low vitality, the head should always be covered with a thick towel or a rubber cap, but this is not necessary where the shower is used as a tonic measure for those of vigorous health. It is well to keep in active motion during the continuation of the shower which should never last more than from one to three minutes. It is well to rub the chest vigorously.

In many cases it is well to precede the cold shower by a hot



Showing how a capital shower bath may be improvised by means of an ordinary garden sprinkling can. The top handle should be suspended on a rope, with another cord or rope, fastened to the side or back handle, passing up over a couple of pulleys and down to the hand of the bather. This makes a good outdoor shower. If one has a secluded place in the back yard of a country home. If in the house, provision should be made for catching the shower either in a bath tub or ordinary tub. In this case a curtain made of ordinary muslin may be suspended from strings stretched across the room, or from a large ring suspended horizontally, in order to confine the shower and splash, and prevent wetting the rest of the room. In the ordinary bath tub it is well to have a bath mat to prevent slipping, for the bottom of a porcelain tub is sometimes so slippery as to be dangerous. If one has a porch that can be satisfactorily screened in, temporarily, this would be an excellent place for such an improvised shower, sweeping the water off the porch afterward and also making the porch refreshingly clean at the same time.

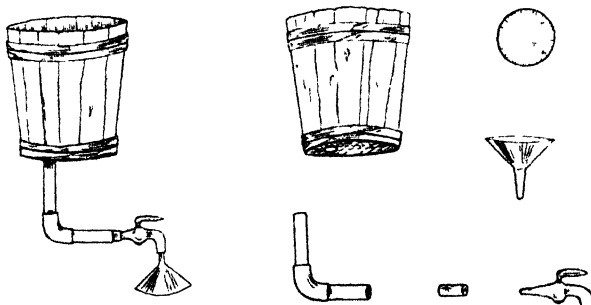
one and the quicker the change is made from hot to cold the more effective the reaction. The hot shower at a temperature from 100 to 112 degrees is sometimes beneficial where it is necessary to excite the heart's action. The neutral shower has somewhat the same effect as the neutral bath, but the effect is produced somewhat quicker.

Those who are feeble and of low vitality should never attempt to use the cold shower bath except under skilled advice. Its habitual use, however, by boys and girls, young men and women and adults as a daily hygienic measure for preserving and increasing the vital force is highly commended, but it should always be taken rapidly and the body should be perfectly dried and clothed as soon as possible after the bath.

The horizontal rain douche or spray can often be used to good advantage, and in many establishments this special appliance is provided with many jets on four sides.

The ascending douche is oftentimes of great service, especially in cases of hemorrhoids, constipation and rectal difficulties.

A good arrangement of a shower for one who does not wish to get his or her hair wet every time, is to have it project from the side of a wall at about the level of the neck, and



A convenient home-made shower bath may be made with the aid of a wooden tub; a lard or butter tub is preferable. Secure two pieces of 1 1/2 inch iron pipe and an iron elbow. Next make a plug of soft fine wood and drive it into one of the pieces of pipe. Then bore a hole in plug large enough to admit an ordinary brass faucet. Purchase a large tin funnel. Cut a piece of tin the size of the top of the funnel and punch it full of holes, then soldering the same on to the top of the funnel. Next solder the funnel into the faucet. Now the entire faucet must be attached to the tub, which has a hole bored through the bottom for the purpose. After filling the tub the shower is obtained by simply turning on the faucet.

the neck of the nozzle or spray bent downward at an angle of forty-five degrees, or a little more. Many up-to-date bath tubs are now supplemented with a shower apparatus, arranged to use either hot or cold water, or medium, the tub itself serving as a drain, and

a circular curtain hung from a large ring above prevents any splash outside of the tub.

A home-made shower is a very simple thing to devise, for those who live in country houses not provided with modern bathing conveniences. A common garden sprinkler will do fairly well, suspended overhead, and tipped when ready by means of a cord tied to the bottom and passing up over a pulley and then down to the hand of the bather.

Cold Hand Spray.—The suggestion given elsewhere for a *cold sponge* with a *hot foot bath* can be advantageously applied to the cold hand spray. After a warm bath with soap it is a good plan to spray the body quickly with the cold water while the feet are still in the warm water.

THE SITZ BATH.—This is one of the oldest and most serviceable of hydro-therapeutic measures. Many homes are



Illustrating manner in which a sitz bath may be taken in an ordinary bath tub. One must be sufficiently strong to be able to lower and raise the body with the arms in order to employ this method, the feet being kept out of the water by placing them upon one end of the tub. It is also possible for those of limited strength and less recuperative power to take a warm foot bath simultaneously in a large bath tub, by simply placing the small foot tub or pail full of the warm water into one end of the large tub containing the cold water. Naturally, in this case, the cold water must not be of sufficient depth, even with hips submerged, to overflow into the small foot tub.

now equipped with the sitz bath tub in the bathroom, but where such an appliance is not established and its use is needed an ordinary wash tub or a regular bath tub may be used, or a movable zinc sitz bath tub may be obtained at any first-class hardware store. The tub should allow of water deep enough to cover the navel, and where possible one should have an abundant supply of hot and cold water. The temperature of the sitz bath may be adjusted to whatever is required. In the regular bath tub the feet may be placed up on one end or may rest on the sides, while the body is lowered by the arms until the hips rest on the bottom. The feet are excluded.

Sitz Bath, Cold.—It is seldom that the temperature of this bath is required lower than from 55 to 60 degrees, and the time should be from one to fifteen minutes. The cold sitz

bath, however, should never be taken by weak patients unless the feet are in hot water in another pan or foot bath. The effect of this bath is invigorating in the extreme, especially to the spine, the brain and the organs of generation. As a tonic measure in cases of healthy men and women its daily use is highly advantageous. When

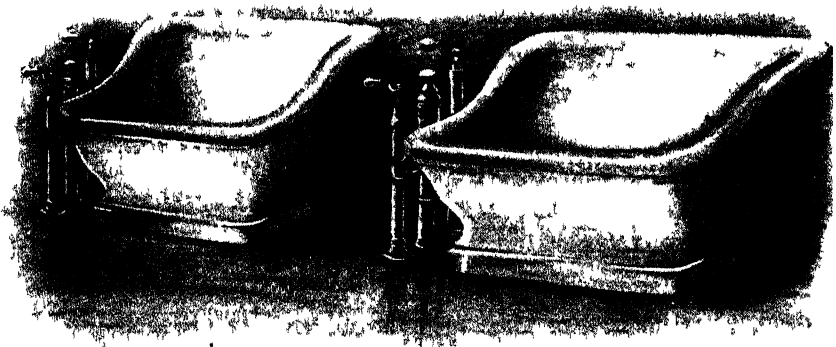


A home-made sitz bath, showing how it may be improvised through the use of an ordinary small wash tub. In many cases it will be better to elevate the back of the tub a few inches which will also require less water. This will likewise offer greater comfort to those whose legs are short.

suitable clothing is worn it can be taken without undressing. Unfortunately our modern dress for women would require that they entirely disrobe for the sitz bath. But man's costume allows him to take the bath without this inconvenience, so that it can be self-administered at noon, which is perhaps the best time for the cold sitz. The effect is tonic to a high degree, and unless it is taken for too prolonged a period is always beneficial.

When a sedative effect is desired a tepid sitz bath, with the water from 70 to 80 degrees, should be administered, and one may sit in this bath for from ten to twenty minutes, as desired. There are times when the flowing cold sitz is advisable. In this case the flow of cold water should be allowed to come in sufficiently to preserve the required temperature of the bath, as otherwise, the longer one remains in the cold sitz, the higher the temperature of the water becomes, on account of the abstraction of heat from the body. There are some rare cases in which a prolonged cold sitz bath is indicated, but this should be taken only under expert advice.

After being in the bath long enough, one may, if he has great recuperative powers, splash over the entire body quickly with the cold water, or may even take a quick plunge in the



Two tubs side by side, for taking alternate hot and cold sitz baths; a wonderfully effective procedure in many cases. The illustration shows the special type of sitz bath made and sold for the purpose, though one can also improvise the bath with an ordinary wash tub, as indicated in another illustration. In taking the single cold sitz bath it is often desirable to use the hot foot bath at the same time, in which case a small foot bath tub may be placed just in front.

tub, if a large tub is used. This is not an essential part of the cold sitz bath, however, and may be regarded as merely supplementary, when it is desirable. (See also *Nature Bath*.)

Hot sitz baths also are invaluable for many purposes, relaxing, relieving pain and inflammation, and remarkably accelerating the circulation locally.

THE SITZ BATH, REVULSIVE OR ALTERNATE HOT AND COLD.—This, as its name implies, requires two sitz bath tubs; one is filled with cold water and the other with hot water (115 to 120 degrees). The patient first sits in the hot water for from three to eight minutes, then he changes to the cold bath, sitting there for a period varying from a few seconds to a minute or more; after which he returns to the hot bath, the temperature of which should be re-established by the addition of more hot water. Three or four changes may be taken, according to the requirements of the case.

SNOW BATHS.—In referring to snow baths I do not wish it understood that I would recommend their general practice for the average man or woman, for in many cases it is much better to sound a warning against such extreme measures. They are better as a means of testing one's condition than as a means of improving it. However, for those who are already strong and who have a vigorous circulation, with consequently great recuperative powers, a brief snow bath may be of value as a means of still further promoting hardihood and vigor. They should be taken with caution by those who are strong, and never by those who are not.

Much depends upon the manner in which a snow bath is taken, and especially upon the temperature of the atmosphere. One should be thoroughly warm before taking it, as in the case of any cold water bath, and it may be said that it is not really so severe a tax upon the body as a bath in ice water, whereas the reaction from the snow is the most delightful and perfect, better if anything than that from the use of water. For this reason I would often recommend local packing with snow when it is available instead of with cold wet cloths.

The trouble with snow baths in many cases is that the

enthusiast ventures out-of-doors unclothed in an atmosphere perhaps forty degrees or more colder than the snow. When the thermometer indicates that the temperature is below zero, Fahrenheit, it is the cold air and not the snow that so severely taxes the vital energy and heat of the body. One should not attempt a snow bath under such conditions unless he is phenomenally powerful. If the snow bath is taken in a fairly comfortable atmosphere, however, it will be greatly enjoyed by those physically fit for it. Prolonged exposure is not to be desired. The essential health-building factor is the reaction, and having accomplished this one should not linger to reduce the heat of the body and its vitality. It is best to lie down in the snow and quickly cover the body, or to roll over in it.

For true health-building purposes it would be best to bring a large quantity of snow into a reasonably warm bathroom. There is nothing I could more highly recommend than a sitz bath in snow, in a warm room, for this will not prove any special drain upon the vitality even of one who is not very strong.

For building vigor of the pelvic organs this snow sitz bath cannot be surpassed, though it should not be continued too long. The reader will of course understand in all such cases that the limits of comfort and pleasure are not to be transcended, and



A morning toilet *a la* North Pole, guaranteed to wake one up. The use of snow is splendid for a rubbing bath, but is best applied for this purpose, and for the average man, in a warm room. For the outdoor snow bath the better method is to lie down in the snow drift and roll in it for a few moments only.

if snow bathing is a hardship or punishment, it should be strictly eschewed.

A snow bath, or snow rub, which corresponds with a sponge bath or splash, may especially be recommended for the average man or woman, as a substitute for a cold water bath. Simply take a handful of snow in each hand, and rub briskly over all parts of the body. We all remember how we have involuntarily had our faces washed with snow in the course of play when we were children, and we recall the exhilaration which we could not help but feel in spite of our unwillingness to be subjected to such undignified treatment. In washing the entire body with snow we may get the same effect constitutionally, waking up every inch of the surface of the body and stimulating the activity of every one of the three million or more pores of the skin. It is well worth trying when there is snow to be had, though one should use the same care as in cold water bathing.

SOAP AND ITS USES.—For cleansing a truly dirty skin, soap may be regarded as a necessity, though it is important to use some care in regard to the kind of soap employed, and to know that it is easily possible to use too much even of the most perfect and satisfactory kind. I must say that, as a general thing, soap is more valuable for cleaning dirty floors and soiled clothing than the human epidermis, though where there is visible dirt or unquestionable forms of contamination, the use of a pure vegetable soap is essential.

One reason why the skin is such a smooth and flexible fabric, with such splendid resistant powers, is to be found in the protection afforded it by its waterproof coating of natural, delicate oils. The removal of too much of this oily substance is a great disadvantage, and for this reason soap should be used moderately. The alkali of soap takes away this oil along with the other dirt leaving the surface dry and harsh. The result is likely to be tiny cracks into which the dirt works its way and stays. Naturally, more soap and energetic scrubbing are required to get the dirt out of these cracks, but this again only makes the skin more dry than before, deepens the cracks, and the condition gets worse and worse. When once the skin gets

badly chapped it is with some difficulty that it is brought back to its normal state, particularly if the excess use of soap is continued, though Nature will attend to this if left alone. The rubbing in of olive oil or other wholesome fats will relieve the situation. A few drops of fresh, sweet cream would answer.

One should avoid all soaps made of animal fats. A pure castile soap is probably the best, though, as I have said, even this should be used moderately. We must not forget that a great deal depends upon the character of the skin, for some are so much tougher than others, so much more leathery, that they can endure a good deal of abuse in the way of strong

soaps. There are some skins which protect themselves much more effectively against such abuse by secreting a far greater quantity of the natural oils than others. It is they who are happy in the possession of such a robust outer covering who are most accustomed to say, and with the utmost conviction and assurance, that "plenty of good soap and water never hurt anybody!" Some skins, however, are so delicate and sensitive that the use even of a little soap results in a dryness and irritation that means real suffering. The possessor of such a tender scarf-skin, after a bath in which soap has been used freely, will experience a smarting and itching which upsets the entire nervous system, interferes with sleep and accomplishes a



A very satisfactory way of taking a cold "sponge" or towel bath in one's bedroom, where there is no means of draining water, and where splashing would not be desired.

measure of harm which is far greater than any good which might have been secured by the cleansing qualities of the bath.

Those having such skins should use only the faintest suggestion of pure castile, if any, and should take special pains in rinsing with cold water, afterwards drying very thoroughly. In such cases I would really advise the use of no soap at all, but to substitute oatmeal or rolled oats, which will be found very cleansing and free from any injurious effects.

Under no circumstances would I recommend the use of soap every day in bathing. But for those whose skins are not so delicate, the use of castile soap in warm baths perhaps twice a week is to be desired on account of the accumulation of stale perspiration and various impure matter eliminated through the pores. The ordinary cold baths, taken for their tonic and invigorating effects, will not answer this purpose.

One good way to keep the body clean is to arouse free perspiration through exercise, and then wash this off, rubbing with the hands, even without soap.

THE SPONGE OR TOWEL BATH. (*For Patients.*)—This bath for patients is taken in practically the same way as the wet hand rub, though if possible the patient should stand in a foot tub with a sufficiency of water at a temperature of 104 to 110 degrees. In this bath, however, it is not necessary to dry each part of the body before proceeding to the next. Sponge over the whole surface with plenty of water at from 60 to 70 degrees, and see that there is always a sufficiency of water in the sponge. After the general sponging throw a dry sheet



Applying a bath sponge to the back and shoulders.

over the patient, then let him hold each foot alternately over a foot tub while cold water is poured over it. If the patient is able to take moderate exercise after this bath it is advisable that he do so; if not the attendant should rub his body until reaction sets in.

When the patient is unable to take this bath standing, a rubber blanket should be placed beneath him on the bed, so arranged that the water may drain without wetting the bed clothes.

The temperature of this bath varies according to the effect desired. If needed to reduce fever it should be cold. Its use is exceedingly advantageous in slight cases of fever, in feeble patients or children, and is also capable of self-application. (See also *Cold Sponge in Health*.)

SPRAY, HAND SPRAY.—See *Shower Bath*.

SPLASH BATH.—See *Splash, Cold* and *Splash Hot*.

SPONGE BATH.—See *Cold Sponge*.

SUN BATHS.—When we realize that the sun is the source of all energy and life upon the earth it is not surprising that its rays should be of such great value in vitalizing the human body and building health. Without the sun the earth would be infinitely colder than any ice chest; it would be even colder everywhere than it now is at the North Pole, and life of any kind would be impossible. Without the sun, the atmospheric vapors would not rise, and there could be no rain. No plants could grow, no sheltering trees, no fruits, not even a blade of grass, and animal life could never have commenced.

One can readily demonstrate the importance of the direct rays of the sun in the growth and condition of vegetation. Suppose that you supply air, warmth and moisture, all these really depending primarily upon the beneficence of the sun, in an experiment with a plot of grass, but contrive to shut out the light, you will soon see the result. The grass may grow, but will lose its color and its strength, and in time will cease to grow. The experiment can be best made with two plots of grass side by side, one covered and the other exposed to the light. But yet thousands of human beings avoid the sun day

after day and week after week, and then wonder why they are pale and lacking in energy. The pallor of the city dweller is a distinctive characteristic as compared with the ruddy complexion and virile blood of the country people.

The power of sunlight is shown very clearly in the chemical processes of photography. But it is made even more emphatic in our personal experience with sunburns, when our unaccustomed and usually sheltered skins are exposed for too long a time to the direct and nearly vertical rays of the sun. For this reason one should be careful not to overdo the practice of taking sun baths in the beginning. They are very energizing and effective, but they must not be carried too far. In a general way, I would advise those with very light complexions to be very careful in this respect. The coloring pigment of the skin serves as a protection against the harsher rays of the sun, and dark complexioned people can endure a great deal of sunshine for this reason. The aboriginal races of the tropics are all dark skinned, and some of them actually black. There is nothing to be feared from the rays of the sun in the early



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Take all the sunshine that you can—but in reason.  A. J. J. U.

morning or late evening, and not much in the winter time, when they are far from vertical; but in the noonday sun of summer I would not advise a sun bath of more than ten or fifteen minutes' duration to start with. With some very light skins this would better be cut down to five minutes at first. To overdo it suddenly will occasionally result in headaches and a marked sense of weakness. Follow your instinct in this matter, and so long as the sun "feels good," warm, balmy and gratifying, it will do you good, short of sufficient exposure to cause sunburn. But if it begins to feel oppressive and weakening, do not remain in the sun because anyone tells you it is good for you. Take only a few minutes of it at a time and take another few minutes the next day. As you gradually become tanned, the increased pigment in the skin will protect against the harsh rays so that you can benefit more from the others. Cases of low vitality should keep the head covered.

Clothing should as much as possible permit the light of the sun to penetrate, and for this reason light colored fabrics should be used as much as possible. Though white is not usually very serviceable, yet a light tan or gray will answer just about as well, and are among the most serviceable of all colors. Black is almost insufferable in summer. It absorbs the heat but shuts out the light. Light colored fabrics, on the other hand, seem to reflect or minimize the heat and allow the light to penetrate to the body.

Investigators have come to the conclusion that orange colored cloth will protect the body against the destructive rays of the sun, without interfering with those which are favorable to the welfare of the body, just as red and orange colored glasses will protect photographic chemicals. It is probable that it is only the excessive strength of the destructive rays, that makes them harmful. In moderation, even they may be beneficial. However, a few years ago experiments were made with orange-colored underwear for the United States Army in the Philippines, to test this point. I do not know the outcome of these experiments, but it is very evident that the khaki uniforms now used are a great improvement over the heavy dark blue.

Sunshine is a germicide and disinfectant, as well as a vitalizing influence for the body. Its value in both respects is now well recognized in nearly all large sanitariums and hospitals, for they invariably provide sun parlors and conservatories where patients may get the benefits of this form of treatment.

THE SWEAT BATH.—The sweat bath has been used by aboriginal men from time immemorial. To this day its use is regarded as a religious act and required weekly by many tribes of North America. The songs sung during its progress indicate the belief of the Indians that it was instituted by their good god for their benefit. In northern Russia and in Finland, almost every house has its own sweat-bath. This is a room where the bathers assemble and in which hot steam is produced by pouring water upon red-hot rocks. The rocks are brought in, in three or four relays, so that the heat is not only kept up, but increases, as the bath continues, until the bathers are dripping with perspiration and their whole bodies are thoroughly heated. They then rush out and either jump into cold water or roll in the snow, thus producing the most vigorous and healthful reaction.

All people of a sedentary occupation or who for any reason lack opportunities for, or fail to take, sufficient exercise, should take a sweat bath at least once a week. The effect of the moist heat upon the sebaceous glands is to soften all the products of elimination that have accumulated there and at the same time to dilate the surface blood vessels to their utmost extent. This not only promotes the removal of waste excrementitious matter, but by calling the blood to the surface relieves inward congestion. As soon as the surface of the body is cleansed, the cold application should take place. This immediately causes a vigorous inrush of blood to all the interior vessels, thus stimulating all the inward functions and increasing their healthful vigor by the flux backwards and forwards between the exterior and interior of the body.

It also stimulates the nutritive processes and invigorates the nervous system so that the appetite and powers of assimilation are improved. Powers of resistance are also increased,

thus making the body better able to withstand the encroachments of disease. The sweat bath should never be taken until an hour and a half has elapsed after a meal. The better time, however, is just before retiring, though it is well, if possible, to take a fifteen or twenty minute walk in the open air, or a little not too vigorous exercise just after the bath and before retiring. (See also *Cabinet Baths*, *Russian Baths* and *Turkish Baths*.)

THE SWIMMING TANK.—If water in a swimming tank is cold enough, without being too cold, the tonic effect of the water is added to by the invigorating and healthful exercise incident to swimming. There are few recreations that have such a beneficial effect upon the muscles of the chest, lungs and back as has swimming. Where possible, it is always best to dive or jump into the water rather than to enter it slowly feet first. Care, however, should be exercised not to remain long, as the reduced temperature of the water causes the heart to work violently to bring the blood to the surface of the body, and while the latter condition is one of the desired effects of the cold bath, if prolonged to too great an extent, it produces weakness instead of renewed energy. (See *Open-Air Bathing*.)

SWIMMING.—See *Open-Air Bathing*.

TEPID BATHS.—Tepid baths are mildly cleansing and refreshing. Apart from curative measures they are to be recommended in those cases where one is too delicate to take either cold or cool baths, and as a rule are best taken in the form of a sponge. As a form of treatment this subject is covered in the discussion of the *Neutral Bath*, which see. (See *Cold Sponge Baths*.)

TOWEL.—See *Cold Towel Bath*, *Sponge or Towel*, *Wet Towel Spank Bath*.

TUB BATH.—See *Cold Plunge*, *Neutral Bath* and *Hot Bath*.

THE TURKISH BATH.—This bath is similar to the hot air bath, but differs from it in that it encloses the whole body, and as administered by the Turks in Constantinople and through-

out all large cities in the civilized world, is accompanied by friction, massage and shampooing. Necessarily it can only be given in an establishment that is equipped for the purpose. The nude patient enters the hot room (120-140 degrees F., having previously drunk freely of hot or cold water), where he remains for ten or fifteen minutes. The attendant rubs the surface of the body to excite skin action and induce perspiration. He then enters the second department, which is much hotter than the first, from 150 degrees to 190 degrees and after thoroughly perspiring he goes to the shampoo room where, lying upon a slab, he is rubbed down by certain peculiar motions for the purpose of arousing and removing the dead cuticle and all eliminative matter which has accumulated in the subcutaneous glands. He is then shampooed with soap and water, by the aid of a shampoo brush, after which a douche is administered, beginning with a warm shower of about 105 degrees. When well heated the hot water is turned off and cold administered, after which he may enter the plunge bath and swim for a minute or so if he desires. He is then quickly dried, rubbed vigorously, and then reclines for fifteen to twenty minutes, covered merely with a dry sheet, in the cooling room. Dressing is not advised until the pulse has become normal, and the skin is cool and dry. The benefits of this bath and its use are too well known to need any extended comment.

But it is well to know that there is a great possibility of abusing the Turkish bath by its over-use. In fact if it does not seem to bring proper reaction with a material increase in energy it should not be taken. In many cases where below normal weight it is productive of harm.

In short, these baths may be recommended as a means of elimination if one is so situated that he cannot do better. They are used a great deal to get rid of the effects of excessive alcoholic indulgence and other forms of dissipation. They are used by a great many men as a substitute for healthful exercise and outdoor living. After being clogged up with wastes through their negligent habits they go to a Turkish bath and do what they can to sweat out the results of their inactivity

or misbehavior. The worst thing about them is the foul air, for the hot air rooms are nearly air tight and sometimes have practically no ventilation from one day to another. This fact, in many cases, is enough to undo any benefit to be derived from them, and has been responsible for many colds and other diseases contracted in these places. If the ventilation of the rooms could be properly attended to, then these baths could be highly recommended for many purposes. These same objections apply, perhaps even to a greater degree, to the Russian Bath. In both cases, one should insist upon a clean individual brush in the scrubbing process, for otherwise he suffers the possibility of being infected with some disease. The origin of cases of syphilis has in a few instances been traced to the promiscuous and careless use of such brushes in Turkish and Russian Baths. [See also *Russian Bath and Cabinet Baths.*]

THE VAPOR BATH.—The effects of the Russian Bath may be produced in a moderate way by means of the Vapor Bath in a cabinet. A number of home appliances have been designed for the use of this bath, which simply consists of a moveable cabinet in which the patient takes his seat. Under his chair or stool a basin is placed over a small gas, alcohol or kerosene stove. The basin should be as large as possible so as to allow the quick boiling of the water and the rapid production of steam. Its use is valuable in all cases where the sweating process is desired. (See *Hot Air Cabinet Bath.*)

WARM CLEANSING BATH.—This warm bath, with soap, which we may frankly call an old-fashioned wash, really has nothing to do with the various forms of cold bathing intended for their constitutional and stimulating effects. This warm bath is not a tonic, but a cleansing agency, and as such is important in preserving the activity of the skin, which I have already referred to briefly in the paragraphs on the *Advantages of Bathing* in this chapter.

Cold water is only slightly cleansing. Cold baths are not intended for this purpose, and while they may remove some of the heavy dirt, yet they will not affect the more serious accumulations of grease and fine dirt which alone are capable

of clogging up the pores. For this purpose, soap and warm water are necessary. [See *Soap and Its Uses* this chapter.] A hot bath is not necessary for this purpose, but warm water may be used, very little above the normal blood temperature. As a general thing it is best not to remain in the bath more than ten minutes, and to rinse off quickly with a spray or sponging with cold or cool water afterwards, before stepping out of the tub. In country places where no bath tub is available an ordinary circular wash tub is often used, heating the water for the purpose on the kitchen stove. But if even this wash tub is not convenient, one may at least take a warm sponge bath with soap, washing a part at a time and finally rinsing thoroughly with a sponging with clean water. A warm cleansing bath may also be taken very conveniently with a warm shower.

The frequency with which this warm cleansing bath should be used will depend upon the individual, though as a general thing I would suggest twice a week. It should preferably be taken before going to bed. In some cases once a week would be a better plan, particularly where the skin is very sensitive and does not so readily recover from the use of soap. To maintain the most perfect cleanliness one might even take such a bath every day, but this would mean an excessive and detrimental use of soap, and for practical purposes the twice a week plan is quite satisfactory. However, it is of course desirable to wash daily those parts which perspire most profusely, and which are less exposed to the air, such as the arm-pits, the feet, etc.

Occasionally we hear of some one who advocates that we avoid bathing entirely on the ground that the skin is self cleansing and the bath an interference with its natural action in this respect. As I have already said, the scale-like cells of the scarf-skin gradually rub off and take the dirt with them, especially in a state of nature where the skin is exposed. But the use of clothing, even such clothing as many savages themselves wear, materially interferes with this process, whereas on the other hand proper bathing will greatly help

the skin in this direction. And certainly most of us do not desire to carry around with us any accumulations of stale perspiration, nor to permit our persons to become offensive to our fellows. We are not much interested in disease germs, as the reader has found in another part of this work, being concerned rather with the vital resistance of the body in making itself proof against them, but as far as these germs are concerned, we have no desire to make ourselves particularly attractive to them through our external uncleanness, or to make our epidermis a breeding ground. And in warm weather, we prefer not to have the surface of our bodies in such a condition as to attract the flies, mosquitoes and other insects and vermin. And for these reasons the most of us will continue to bathe, using the bath not as an interference with the natural self-cleansing action of the skin, but as a help.

WET HAND RUBBING.—*General Instructions for Certain Baths Where the Entire Surface of the Body Is to be Reached by Rubbing, etc.*—There are several forms of bath in which it is found advisable to rub the patient down either with the wet hand, a sponge, or a towel, beginning with the face and then continuing over the whole body. As the procedure in all these baths is practically the same, the general method will here be indicated.

Suppose that the bath is to be given by wet hand rubbing. The patient lies down upon the couch on his back. The attendant dips his hands in the water and applies them to the forehead of the patient, one hand covering one side and the other, the other. He rubs from the center of the forehead, over the temples and down the cheek around under the chin, in a sort of semi-circle, repeating the movement from six to eight times. Women who do not desire to have their hair wet should have a Turkish towel wrapped around their heads and ears; but with men it is well to shampoo the head with the wet fingers. Now rub the upper part of the chest vigorously, then the sides and then the abdomen. In rubbing the abdomen, first bring one hand across from side to side, rubbing vigorously with considerable pressure; immediately followed with the

other hand. Rub thus transversely over the whole abdominal surface three to six times, then follow with a circular motion following the course of the colon.

Dry each part quickly before going to the other. Rub until the skin becomes red. Now the arms are taken one after the other. If the patient is strong enough to hold up his own arm firmly, the attendant may use both hands for rubbing. Otherwise he must hold the arm with one hand and rub with the other. Begin at the shoulders and rub vigorously down to the wrist, seeing that the whole arm is covered. After drying the arm by vigorous rubbing with a towel until good reaction is induced, give the hand a vigorous rub, the attendant constantly dipping his hands in the water, and finishing by administering three or four sharp slaps upon the palm of the patient with his own hand.

The thighs are next treated, rubbing with both hands downwards, one only being uncovered at a time; then the legs and feet, slapping the soles three or four times vigorously. The patient now turns and lies face downward, resting his forehead upon his folded arms. The neck should first receive careful attention, being well rubbed with the hands around on each side as far as possible. Then treat the back in the following order the same as the front part of the body was treated; the upper part of the back, the shoulders, the arms, concluding with very vigorous strokes from the top of the spine to the coccyx, drying each part as fast as rubbed. The legs, ankles and feet should now be rubbed in the same way. If the wet rubbing from five to fifteen seconds does not produce reddening of the surface, then administer light percussion for that purpose. But everything must be done quickly and a perfect reaction secured on one part of the body before going to the next. This bath may well be given before the patient arises in the morning, and while the body is warm.

THE WET SHEET PACK.—This bath consists in enveloping the body with a wet sheet with other outside wrappings to prevent evaporation. The requisites are a large double blanket, one single blanket, two large sheets, one of which



The Wet Sheet Pack A.—Illustrating one of the first processes in applying the wet sheet pack. Over the first dry sheet you lay a woolen blanket then spreading thereon a sheet wrung out of the hot or cold water, as required in each case. As soon as possible after the patient has lain down upon the latter, you begin by bringing one-half of the wet sheet under the arms and over the chest to the armpits, also tucking it in between the legs thoroughly, as illustrated here.



The Wet Sheet Pack. B.—You then bring the other half of the sheet over the shoulders, arms and the entire body as tightly or snugly as possible, without binding or constricting any part. You are now ready for the blanket, which should be snugly wrapped around the whole, beginning the process as illustrated here, and tucking it in under the shoulders and feet as shown in the next photograph. (See next page.)

should be linen, a large towel and two or three gallons of water at 60 to 70 degrees.

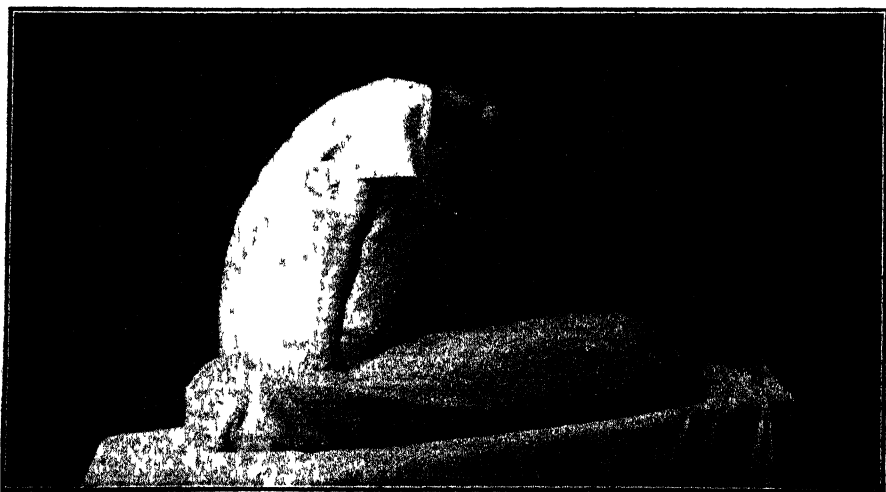
1. Fold a sheet lengthwise and lay it over the couch. See that the upper edge covers the lower third of a thin pillow placed at the head of the couch.

2. Spread a double blanket across the couch. The side opposite to the attendant should hang over about two feet. Place the upper edge of the blanket two inches below the upper edge of the sheet and a single blanket at the foot of the couch.

3. After dipping the second linen sheet in water, wring it out as dry as possible by two persons holding the sheet at each end and twisting in opposite directions. Spread this sheet out upon the blanket, placing the upper edge an inch or two below the upper edge of the blanket.

4. Now let the patient lie down upon the wet sheet so that its upper edge projects three inches above his shoulders, raising both arms above the head.

5. The attendant now draws one side of the sheet across the body, turning it well up under the arms and tucking it in closely all along the sides of the bed. One leg is now carefully wrapped up and the sheet well tucked in, leaving the other leg uncovered. The farther side of the sheet is now brought over



The Wet Sheet Pack. C.—The next and final process is to snugly wrap the under dry sheet over the blanket for the purpose of excluding as much air as possible.

the body, the patient having lowered his arms and placed them close to his sides. A fold is made in the sheet over each shoulder, so as to make it fit snugly, but care must be taken not to constrict the blood vessels.

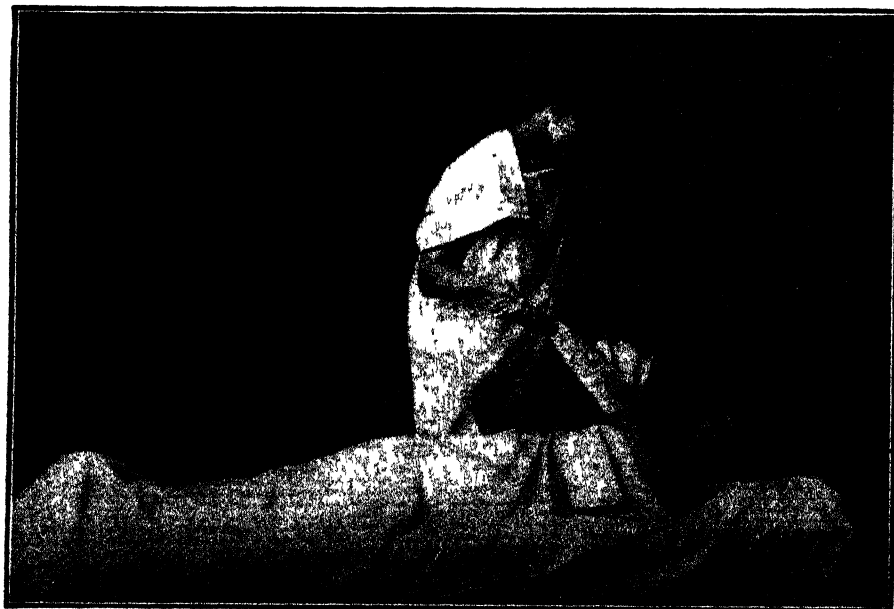
6. The farther edge of the blanket is now drawn across the patient and tucked around the legs, and under the sides and shoulders with great care, a fold being made over the farthest shoulder so as to make it fit snugly to the neck. The longer end of the blanket is now seized and pulled tightly so that the pack is made to fit snugly to the body of the patient. The loose end is drawn up and tucked around the patient so that he is enveloped as completely as if he were a mummy. The blanket at the foot is then doubled under and the underneath sheet wrapped carefully around the body snugly so as to exclude the air.

Where additional warmth is required one or more woollen blankets may be placed upon the patient, care being taken to tuck the upper end under the shoulders and well about the sides and legs. If the wrapping up process is not *tightly* done so that the sheet is brought in close contact with the body and kept there all the time, chilliness is often the result, because under such circumstances, evaporation takes place, when the object of this pack is to produce the accumulation of heat and vigorous reaction. It will be seen, therefore, that extreme care must be exercised in the pulling of this pack tightly around the body and if the patient complains of local chilliness at any spot, the bath should be discontinued or else more carefully administered. Where the patient is either very feeble or exceedingly nervous, it may be well to leave one or both arms out of the wet sheet, but care must be taken to wrap arms well in the blanket (if excluded from the sheet), in order to prevent chilliness.

This bath when properly administered has the effect of quickening the elimination of toxins in the blood, quieting the nervous system and at the same time developing vital resistance. In pneumonia, its value has been demonstrated in many cases. If warming up does not begin soon after the



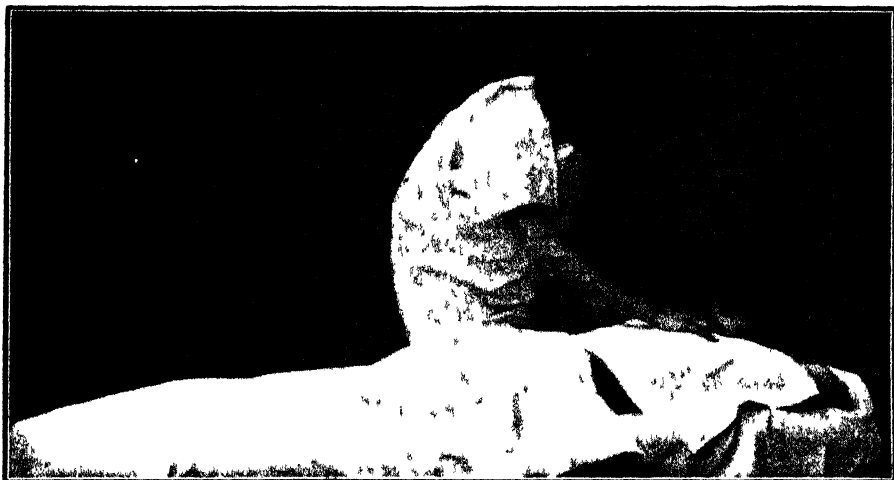
The application of a knee pack. It should fit the knee closely but should not be drawn tightly. Packs should never be tight.



The application of an arm pack. In applying hot fomentations to an arm or leg, the attendant may take hold of each end of the folded hot towel, place the middle of it upon the arm or leg, and then wind around with each end.

patient is placed in the pack, the outer blankets should either be rubbed to help produce warmth or hot water bags or stones should be placed at the feet and sides and on the abdomen.

The head, face and neck should be thoroughly cool before the patient enters the pack, and a cheesecloth napkin wrung out of cold water every few minutes should be placed on the



Method of applying the cold towel bath.



Method of applying a hip pack.

face and head throughout the duration of the pack. The length of this will depend upon the effect desired. Where tonic effects are looked for the patient should remain until he experiences a comfortable sensation of warmth, which denotes that reaction has taken place. This should occur in not less than twenty minutes. Where stimulating or heating effects are desired the pack should be continued until perspiration begins. And where decided elimination is the object sought, the pack should continue so long as sweating continues, even if for one or two hours, or more, provided it does not exhaust patient. More blankets may be added if desired.

It is not uncommon for the patient to feel nervous when first put into the wet sheet pack, but this soon disappears and gives place to a soothing, restful feeling which is generally speedily followed by invigorating and refreshing sleep.

The wet sheet pack may be said to have four distinct stages. These depend upon the length of duration of the pack and the general condition of the patient. 1. Cooling. The temperature is reduced by the cool application. 2. Neutral. 3.



The application of a chest pack. By applying pack nearer the center of the body an abdominal pack is secured.

As heat accumulates there is a decided increase in temperature which leads to—4. Sweating. This latter effect may be increased and prolonged by inducing the patient to drink freely.

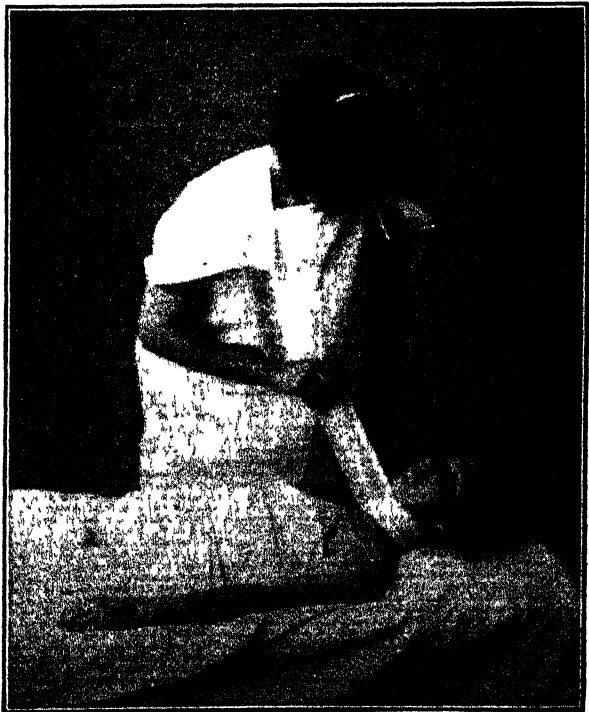
If this pack is not administered the first thing in the morning while the patient's body is warm with the accumulated heat of the night, he should be required either to exercise vigorously, walk briskly or else be prepared for the pack by a hot bath. As a rule it should never be given if he already feels chilly.

If the effect to be produced is purely tonic, the patient should be removed from the pack at the end of seven to ten minutes before the reaction begins. If then followed by a vigorous rubbing down and brisk exercise, the wet pack is as invigorating as the percussion douche.

When it is desired that the pack should reduce the temperature, as in case of fever in some cases a fresh cold sheet should be applied at the end of about ten minutes, or before the reaction begins.

When the application continues until the neutral effect is produced, it acts as a neutral bath, soothing and calming the patient and inducing restful sleep.

In the next period the elimination of toxins begins and if it is continued to the fourth stage, this elimination becomes of the greatest value. Its beneficial effects should be height-



Putting on a neck pack.

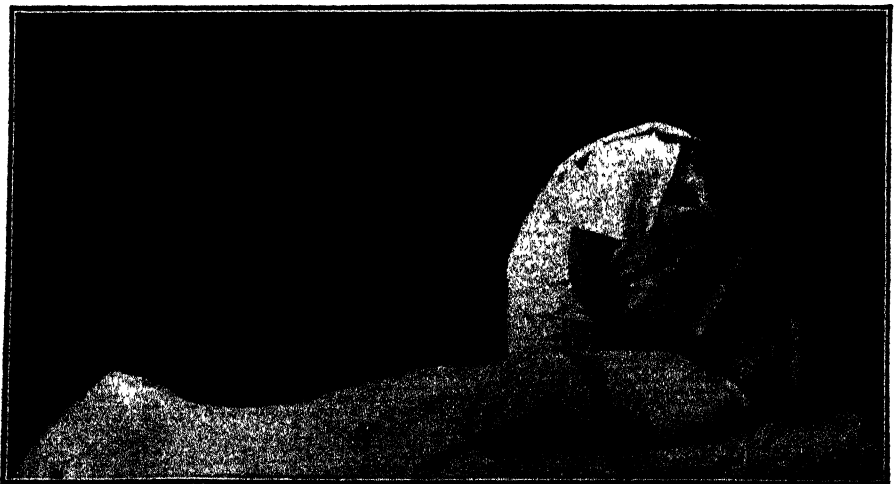
ened by inducing the patient to drink copiously of hot water or hot lemonade.

It can well be seen how the wet pack can be utilized in a variety of diseases, especially where there is fever, or insomnia, or where it is essential that accumulated poisons in the blood shall be eliminated. I have used it with marvelous results in the early stages of measles, scarlet fever, small-pox, etc., for it will arrest any of these diseases by the rapidity with which it causes toxic elimination.

There are two ways of making the wet sheet pack effective for purely cooling purposes without removing any other than the outside wrappings. Either sprinkle the outside of the chest with cold water or rub the pack from top to toe with ice. The warming blanket should then be rearranged as before.

Where sweating is the end desired, the more blankets that are placed on the patient to begin with and the more hot water bottles, etc., the better. (See also *Hot Blanket Pack*, *Dry Pack*, and *Evaporating Sheet*.)

THE WET SHEET RUB.—This is one of the oldest and best known hydrotherapeutic applications, and has been used for centuries with good effect. The temperature of the



Method of applying chest and shoulder pack. The pack should first pass around the chest under the arms, then around outside of the arms, covering shoulders perfectly, and pinning with a safety pin over shoulders.

water is determined by the needs of the patient. Standing in a foot-tub of hot water (104 to 110 degrees) a sheet is wrung out of water of the required temperature and rapidly and firmly brought up around the neck of the patient, who seizes it and wraps it entirely around his body, tucking it in between his legs. The attendant then with open hands rubs across and then down the back, down the chest and then down each leg. The sheet must be kept as close as possible to the body of the patient; so that the rubbing is done solely with the arm or hand of the attendant, and not with the sheet. No time should be lost in putting on the sheet and beginning the rubbing, and in some cases it is essential that two attendants administer this bath, one rubbing in front and the other behind.



The application of the wet sheet rub.

When the body is too sensitive to allow of too vigorous rubbing, gentle patting may be administered instead. Every part of the body should be gone over many times in rapid succession and with as vigorous rubbing as the patient can tolerate with comfort. Only a strong attendant can administer this bath. (See also *Dripping Sheet*.)

THE WET TOWEL SPANK BATH. — When very vigorous and

quick reaction is required, and the patient is willing to endure the rather sharp smarting that comes from spanking with a wet towel, I know of no bath that produces such immediate tonic effects, as the Cold Wet Towel Spank Bath. It is the invention of Dr. George Wharton James, who has used it for many years with good effect, and in a large variety of cases. But it must never be administered without the consent of the patient, as it is apt to provoke anger if applied without full knowledge of what it is. The colder the temperature, necessarily the greater the tonic reaction. In cases of hysteria, or great cerebral excitement, insomnia where the non-sleeper is of vigorous body and mentality, of alcoholic excess, etc., there is nothing equal to it. First thoroughly wet the face, neck and chest of the patient, having him stand in a foot-tub with the water at about 110 degrees. Then, beginning with the buttocks, spank quickly and vigorously with the towel in the following order: up the spine, down and across the back, down both legs, at the back, the feet, up the legs in front, then the chest, and then the abdomen, though the spanking here must not be as heavy as elsewhere. A light towel should be used, well saturated with as cold water as one can secure; the spanking should be with quick, sharp taps as it were, rather than heavy, dull, thud-like blows. Reaction is immediate and permanent.

WOMEN, BATHING FOR.—Especially for women is the cold bath to be commended. Many a woman suffering from functional derangement might have avoided all her pain had she simply utilized the invigorating properties of the cold bath. Nothing is more conducive to functional regularity, for it tones up the nerves, combats almost every form of nervous weakness and practically banishes hysteria. To women approaching what is known as "the change of life" the ordinary distress and discomforts are almost unknown where the cold bath has been a daily practice.

For the most part the general discussion in these pages of bathing in its various forms will apply to women the same as to men. The beneficial results

are the same in both cases and the conditions for success are identical. But in a much larger number of cases it is necessary for women to avoid extremes of cold water and to employ some of the less strenuous forms of bathing. Owing to the great prevalence of nervous weaknesses and disorders among them, it is especially important that they take advantage of the nerve-tonic offered by the use of cold or cool water in some appropriate form.

Probably the first question that will occur to women, on the subject of daily cold bathing, is as to whether or not any exceptions should be made during the menstrual periods. Women have been taught to shun water, and particularly cold water at this time, and there is of course a certain justification for this. The woman who is frail and delicate cannot afford to experiment with herself at such a time. But, here, again, everything depends upon the individual and her strength. The entire question of the advisability of cold



The reclining spunk bath, showing how the cold wet towel is held and applied.

baths at this time, as at any other time, depends upon the question of *perfect recuperation*.

Most women who have practiced physical culture for some time go right along taking their cold baths every day without exceptions for any reasons whatever. If they can recuperate after their bath with perfect warmth and bodily comfort, and with the circulation more active and vigorous than before, then certainly it will benefit them and there is nothing to fear, even during menstruation. It is only when one cannot recuperate, when she feels weakened and chilled afterwards, that any harm can come, and under such circumstances the bath could not be recommended, either at this or at any other time.

Naturally, in a matter of this kind, where unsatisfactory results might have really serious consequences, the only plan to pursue is the safe one, and so long as there is any doubt upon the score of recuperation, a woman would do well to omit the bath during this short period. At least, it might be well to do so in the beginning of the practice, though after she has gained a greater degree of strength, she need no longer deny herself the pleasure of the bath even at this time.

Individual experience must really determine what is best in this matter. I know of hundreds of cases of young and middle aged women who habitually take the cold bath, making no difference whatever between this time and any other. But on the other hand there are certain conditions that clearly indicate that it is best to suspend the cold bath at this time.

It cannot be too emphatically stated, however, that in many cases of functional disturbances, especially where severe measures, when properly applied, are among the most powerful remedial agents known to women at these times.

During pregnancy and lactation it is well to avoid the use of too cold water and all forms of percussion bath. The interior reactions from these forceful applications to the skin are somewhat complex and occasionally produce serious disturbances when not properly applied. Hence it is best to avoid them. (See also *Nature Bath*.)

CHAPTER III.

MECHANICAL CURATIVE MEASURES.

IN the preceding portions of this work the student has become familiar with such important curative measures as diet, exercise, fasting and hydrotherapy, all of which are of inestimable value in building health and eradicating disease. In this chapter we have to do with certain mechanical measures which may be employed with results always gratifying and sometimes startling. Medicine has proven a failure, and the profession which has followed the practice of medicine has repeatedly demonstrated its incapacity to deal with or overcome diseased conditions with either certainty or success. But in turning our backs upon the antiquated methods of this profession, let no one fear that we are casting adrift with no definite aim in view, or that we have abandoned one poor vehicle without a better to take its place. The old vehicle was not a help but a burden. We would have been better off without it. But let it be distinctly understood that in the science of Physcultopathy we have a complete and comprehensive system for the successful treatment of every possible form of disease. We can accomplish with our methods what the members of the old schools never could accomplish. Disorders which they have labeled as "Incurable," have in many instances responded to our treatment. However, this phase of the subject has been extensively covered in Volume I of this work.

The vital and important part of this chapter is that devoted to Mechanical Physcultopathy, but other phases of mechanical treatment are likewise considered in alphabetical order, for the convenience of the student.

CHIROPRACTIC.—Chiropractic is a drugless, mechanical curative system based entirely upon the theory of spinal adjustment as a means of overcoming compression of the spinal cord and spinal nerves. (See *Naprapathy, Osteopathy and Spinal Adjustment Through Mechanical Physcultopathy* in this chapter.) Whereas Osteopathy has to do somewhat with me-

chanical adjustment in all parts of the body, Chiropractic confines itself to the spinal column, which naturally is of the greatest importance in most cases.

The Chiropractor as a rule does not think very well of Osteopathic methods, claiming to accomplish by practically instantaneous methods of spinal adjustment what Osteopathy attempts to bring about by long and tedious treatment. The Chiropractor aims to loosen up the articulations of the spine, to adjust any subluxations of the vertebræ, and thereby to give the spinal nerves free play. Where there are adhesions, he breaks them, so that the articulation may be free and perfect in all parts of the spine. The misplaced or rotated vertebra is often returned to its normal position with an instantaneous snap, and the Chiropractic method even more than the Osteopathic treatment would seem to justify the appellation of a "bone-breaking" measure. However, some remarkable results have been reported from this as from other forms of drugless treatment, particularly in nerve disorders, paralysis and other complaints arising from compression of the nerves.

However, to assume that all disorders are the results of spinal misplacements is entirely illogical. Where there is such a subluxation, Chiropractic will often be of value, but where the disease is due to other causes it cannot avail. I have referred to this aspect in my discussion of *Naprapathy, Osteopathy and Spinal Adjustment Through Mechanical Physcultopathy*. I regard Mechanical Physcultopathy as infinitely superior as a means of spinal adjustment because of the strengthening of the muscles and ligaments which will pull subluxated vertebræ back into place and then keep them in place, and without the use of violent measures. In any event, Chiropractic could only be entirely satisfactory if supplemented by Mechanical Physcultopathy for the sake of giving that strength of the tissues which will prevent the vertebræ from getting out of place again. The Chiropractor himself usually declares that repeated adjustments are necessary, because muscular tension tends to pull the vertebræ out of place again after the adjustment. But if this system is to be used with Mechani-

cal Physcultopathy, then it need not be used at all, for the latter will accomplish all results desired in this direction.

The most absolute and intimate knowledge of anatomy, furthermore, is required for the successful practice of Chiropractic. Not only this, but extended experience is also desired to make the operator proficient. Otherwise the use of this method is likely to be dangerous and to defeat its own end. The operator must know just what he is doing; must direct his lines of force in the proper way, must have absolutely perfect contact; he must have absolute poise; and can use neither too little nor too much force. It is not a matter with which one can afford to experiment, and certainly the attempt to learn such a system by correspondence instruction is of doubtful advantage.

ELECTRO-THERAPEUTICS.—Electro-Therapeutics is the term given to the application of electricity to the human body for curative purposes. It is perhaps not properly classified under the head of mechanical curative measures, but is most commonly used in connection with various forms of mechanical therapeutics.

The use of electricity is of no value at all as a curative measure except in the hands of one possessing a most intimate knowledge of the nervous system, of the various forms of electricity and the thousand and one different methods of applying them. Vast experience in its use is necessary before one can apply it safely, and indiscriminate use by one who has not specialized in it may do considerable harm. It is true that it is of distinct value in some cases, but its influence in such cases is due to its effect in accelerating the circulation of the blood. This acceleration of the circulation, however, may be accomplished far more effectively in most cases by means of exercise, hydrotherapy and Mechanical Physcultopathy. The use of electricity, therefore, would be rather superfluous at an institution or in the hands of a health director using the various natural curative measures offered in this work. The science of Physcultopathy, as presented in these volumes, gives the student a complete system of treatment for disease, applicable in all cases either for home treatment or sanatorium uses.

MASSAGE.—Massage is a form of manual treatment which consists of kneading, rubbing, stroking and tapping the body, or any part of it. It is now very generally used, and is of material value as a means of increasing the circulation. As a form of treatment, however, it is to be regarded as superficial and supplemental, rather than as a comprehensive or effective system of treatment in itself. It is capable of affecting chiefly the muscular system, and does not go deep enough to affect all tissues. Infinitely more can be accomplished by means of Mechanical Physcultopathy, as illustrated and described in another part of this chapter, because the latter not only affects the ligaments, tendons and joints all over the body, but offers a means of influencing the entire nervous system, and through this, of invigorating the entire body.

In case of an accident or illness which prevents the ordinary use of the muscles of the body, massage is of some value as a means of encouraging metabolism, accelerating the circulation and furthering the elimination of wastes, though as I have said chiefly affecting the muscular system. The physiological effect of the kneading, rubbing, tapping or slapping which thereby accomplishes the alternate compression and relaxation of the tissues, is to force the slow moving venous blood out of the tissues and permit them to be suffused with the fresh arterial blood. In the stroking and rubbing phases of massage, therefore, it is often best to stroke or rub toward the heart, which in the case of the limbs would be upward. In the case of stiffened and sore muscles, following an excess of exercise, massage is of advantage. It is much used by athletes, both before and after violent exercise, and is also employed at Turkish Bath establishments.

Massage requires a firm strong hand, preferably one well supplied with padding over the balls of the fingers and thumb and at the heel of the hand. A strong forearm is also necessary, as forearm muscles do much of the work. But massage will soon develop a strong hand. Massage, to be worth anything at all, should be given with energy. In the kneading phases, the masseur should take hold with a firm

grip, so as effectually to compress the tissues and force out the stagnant blood. In treating an arm, the hands should pass up and down the arm, gripping each part for an instant and then moving on one or two inches. After kneading, a certain amount of stroking or rubbing may be applied with advantage, followed by tapping or slapping. This may take the form of percussion, in some cases, striking alternately with the outside edge of each hand in a chopping movement. A circular motion is to be commended in connection with rubbing.

The internal organs may be reached to a certain extent by means of massage, and especially the intestines. Massage is often given for the sake of encouraging action of the colon, and in this case a circular movement is used, following the course of the colon and in the direction of the hands of a clock. In other words, massage of the bowels should proceed up the right side, across and down the left side. A billiard ball rolled around in this way affords a satisfactory form of intestinal massage.

Physcultopathic movements, however, are far more effective than massage either in their influence upon this or any other part of the body. The circulation and elimination are accelerated more effectively, and all of the deeper tissues are affected, down to the very bones and nerves. I do not desire to minimize the benefits of massage, but to point out its place as a more superficial method. And since everything can be accomplished with so much greater satisfaction by means of Mechanical Physcultopathy, profusely illustrated elsewhere, I have made no attempt to include here an extensive discussion of massage.

MECHANICAL PHYSCULTOPATHY.—Life and health as we have seen are sustained in all cases through a certain amount of activity. As a rule the greater the activity, within reasonable limits, the stronger and healthier the affected tissues. For instance, if you increase the circulation of the blood in any of the tissues of the body, you very materially hasten metabolism, which is the scientific name for tissue changes. In hastening these changes an improved quality of the tissue is insured. The

minute dead cells are rapidly eliminated, and new, live cells, wherever needed, are quickly supplied. Thus, by insuring normal circulation to all parts and tissues of the body, one is able to establish what might well be described as perfect health.

As we all know, there are various methods of accelerating the circulation. Many of the advocates of Suggestive Therapeutics maintain that the circulation in any part of the body can be increased by simply calling upon the mind to direct its attention to that particular part. No doubt there is some truth in this contention, but the results that can be derived from any such treatment are insignificant when compared to other more effective means. The medical man will prescribe drugs of various kinds for increasing the activity of the functions that control the circulation. He will prescribe medicines that act as stimulants. Please note, however, that every drug accomplishing such a result secures its effect entirely by reason of its poisonous influence. For instance, as soon as the drug is passed into the stomach the tissues recognize it as a poison and the functional processes with which it has to do in every part of the body are immediately aroused with a view of throwing out the enemy. In other words, one is actually fighting for his life under such circumstances, and instead of conserving and building strength by methods of this kind, he, on the contrary, really decreases his vitality.

There are many who believe in massage as a means of accelerating the circulation, and it is of considerable value, though one should remember that it does not in any way exert the muscles of the body, and consequently has but little influence in the building of strength, except to the extent that it may add to the vigor of the functional processes.

Hydrotherapeutic treatments of various kinds are now extensively used as a means of stimulating the circulation, and they are of very great value. But here, too, we are compelled to make but slight exertion, and consequently the upbuilding processes are not always capable of producing what might be termed unusual results.

Physical culturists will always prescribe exercises when

they are desirous of improving the general circulation. There are no other means which could be prescribed that would be more effective. You must remember, however, that the ordinary movements which are required in the exercises followed out in the regular systems of physical culture, or in those that are used in the gymnasium, do not by any means bring into active use every part of the tissues which form the muscles and ligaments throughout the entire body. Even in the most complete system there is a lack of use of some of these ligaments and muscles. These systems are usually more especially defective when it comes to using any part of the body in the spinal region, where, as I have previously mentioned, (Chapter VII, Volume 1,) the energy that actually "runs the human machine" is located.

In Mechanical Physcultopathy we have a method of vigorously stretching and stimulating every fiber and tissue of the body. There is no other method, regardless of its nature, that so effectively accomplishes this purpose. It is true that one cannot put himself through the most complete treatment with this particular method of health building, though with the suggestions that I am about to offer the possibilities in the way of self-treatment will be of special value.

Now, in seeking for a method of invigorating or stimulating the cell life and activities of the tissues, I first of all realized that it was necessary to actually use the tissues by some specific and effective method. For instance, in treating the tissues around the joints, the ligaments and some of the deeper muscles, it was a really serious problem as to how they could be exercised, employed or acted upon while in a relaxed condition. I do not mean massage, though that to a certain extent is a relaxed method, but I mean the actual stretching of the muscular tendons and ligamentous tissues of every part. On frequent occasions one comes in contact with patients who are not really able to exercise. Massage under such circumstances is of undoubted value, but if too greatly weakened one can furnish a system that will have very much the same effect as exercise; that is, it will invigorate and

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stretch the muscles and accelerate the circulation in all the tissues. One may readily understand how a material increase in the vital strength would be effected in this way in a very short time.

Mechanical Physcultopathy has the advantage that it can be used with equal success by a very weak invalid, or by a very strong man. Naturally, if it is used on an invalid it must usually be applied by an operator. However, if one possesses sufficient strength to walk around or sit up, the self-treatment methods are to a certain extent beneficial, though even under such circumstances an operator can give the treatments far more satisfactorily. In fact, as previously stated, it is impossible for one to give himself some of the movements that are essential in order to reach all of the tissues of the body, no matter how strong he may be.

The fundamental principle upon which Mechanical Physcultopathy is based, is the stretching of the ligamentous, tendinous and muscular tissue in a relaxed state, and then following this relaxation with a certain amount of exercise, in which the will of the patient is required to furnish resistance to the movements of the operator, or by himself in case he is applying the treatment.

In order to make plain the idea that I am presenting, I would call attention to the illustration on the opposite page. You will notice that the thumb of one hand is placed front of the first finger of the other hand. This is one of the movements which are required in the treatment of the fingers. For instance, if you were treating the hands with a view of accelerating the circulation of that particular part by loosening up the ligaments and joints and stretching the tissues, you would begin by pushing back the first finger as far as possible, as shown herewith.

You would next completely reverse the movement as far as possible with the parts all entirely relaxed, and push the finger as far forward as possible; naturally not using enough force to cause pain. You would then push the finger over as far to the right side as possible, then as far to the

left side as possible. Remember that all this time the finger is to be completely relaxed, the idea being to stretch the tendons and muscles that control the finger, together with the broad ligamentous tissue that binds the joints together. After stretching the joints in this manner, you should then move the finger in a complete circle, making the circle as wide as possible and at the same time maintaining a completely relaxed condition of all the tissues. In making this movement you would naturally catch the finger about the middle of the first joint, so that when moving the finger forward you would get the full benefit of the stretching process, for otherwise the finger would bend and you would not be able to stretch the tissues fully.

The next operation on this same joint would be the twisting of the finger in both directions. Merely grasp the finger vigorously and twist as far to the right as you can without pain, and then as far to the left as you can without pain.

All of the movements mentioned so far have been with relaxed tissues; that is, with no resistance. When the patient is strong enough, after having taken all of these exercises with relaxed tissues, one or two of each of these movements should be made with the patient slightly resisting, thus more vigorously exercising the tissues.



Illustration of Physcultopathic treatment
of fingers and hands.

To a large extent the description of the treatment of this one finger will give you the principle upon which the treatment of all of the joints of the body is based.

If one were to use the Science of Mechanical Physcultopathy on every joint of the body, he would begin with the first joint of

the finger, and of course a treatment followed out like this

would take several hours to satisfactorily perform. Therefore in giving these treatments it is naturally advisable to treat those particular parts of the body that are most in need of the stimulation, or which more directly affect the vital energies.

The same principle that I have described in the use of the finger may be applied to the wrist, for instance, bending it as much as possible by bringing the hand backward, then bending the hand forward, bringing the wrist to the right side and to the left side, then moving it in a complete circle, and finally twisting the hand far to the right and far to the left, all these exercises to be taken with the parts completely relaxed. Then pass on as in the previous case, to the movements which require a slight resistance. The same principle can be again used at the elbow, and then at the shoulder.

We will now take up what is really the most important part of the body for securing marked results in this particular kind of treatment, namely, the spine. It is here that stimulation of the tissues seems to accomplish the most remarkable results in the way of health-building processes. The reader is referred to Chapter VII, Volume I, for the scientific explanation of this fact.

Let us begin at the upper part of the spine, commonly termed the cervical region. In order to properly stimulate the muscles and ligaments around this particular part of the spine, you will begin by bringing the head as far forward as possible, allowing it to come so far forward that the chin will rest on the chest; then make three or four quick jerks, endeavoring to bring the head still farther forward. Next bring the head as far back as you possibly can, making a few gentle pushes and turns while the head is held in this position, being extremely careful in these movements.

Now bring the head far to the right, and make several jerks trying to bring it still farther to the right; then execute the same movement to the left. Now, standing with the head in an erect, normal position, turn it as far as possible around to the right, thus twisting the neck, and then make three or four

quick jerks trying to move it still farther. Repeat the movement, turning head to the left. This turning of the head far to the right and left may also be executed when the head is far forward or far backward, or far to the right or far to the left. Each one of these movements, by the way, uses and affects the tissues in a somewhat different manner.

Let us now pass on to the lower dorsal and lumbar region of the spine, lying from beneath the shoulders to the hips. To effectively treat this part of the spine by these methods you would first bend the body as far forward as you can, not bending at the hips, but by bending the back, and while in this position try to bend still farther forward with three or four jerks, as in the previous cases. Now reverse the position and bend the body as far backward as you possibly can, with the usual three or four efforts to bring it still farther back. Now move the body far to the right, bending at the waist, with the same efforts to move it still farther, and then execute the same movement to the left. Now, keeping the hips immovable, twist the body from the waist as far as you possibly can to the right, then making three or four vigorous efforts to twist the shoulder still farther around, turning the shoulders back a little also, and bringing them around with a jerk. You should be careful not to use so much force in this particular movement as to cause pain, though after it has been performed a few times there is little or no danger of a strain from executing the movement too vigorously. Identically the same movement should be taken twisting the body to the left, being sure to twist the shoulders around as far as you possibly can, and making three or four efforts to twist them still farther, as previously described.

The legs can best be treated while reclining. Lie on the back, and bring the right leg with the knee straight and rigid as far upward as you possibly can, making three or four efforts to bring it up still farther; now cross the right leg over the left, and bring it over as far as possible, making three or four efforts to bring it still farther. With knee straight and rigid, twist the foot around to the right as far as you can, with three

or four efforts to twist it still farther, then twist to the left as far as you can, with the same additional efforts. Go through exactly the same motions with the left leg. Then recline face downward. While in this position bring the leg upward as high as you can with the knee rigid and make three or four efforts to raise it still higher after having brought it up to its limit.

In the treatment of the knee joint, first straighten out the leg completely and then make three or four efforts to straighten it still more. Now while pressing the outer side of the right foot against some heavy substance, or holding the outer side with your other foot, press outward against the inner side of the right knee joint with your left hand. Now reverse the position, pressing against some heavy substance with the outer side of the other foot, and press outward on the inner side of the left knee joint with the right hand. In a similar manner each knee may be pressed inwards. These movements will to a certain extent affect the capsular and other ligaments that pass over the side of the knee joint. Now while lying face downward bend each knee as much as possible. To make this effective catch the foot in one hand and make the bend as complete as possible without actually causing pain.

In the treatment of the ankle substantially the same movements that are indicated in the treatment of the wrist are required. First, either while reclining face downward or standing, bring the toe upward, with your hands, as far as you possibly can. Then bring the toe backward as far as you possibly can. Now bend the ankle to the right, then to the left; then turn the toe of the foot in a complete circle. Now take these same movements, resisting slightly with the ankle. It is naturally very difficult properly to treat this part yourself, though if it is possible to use your hands you can go through the various movements with considerable benefit.

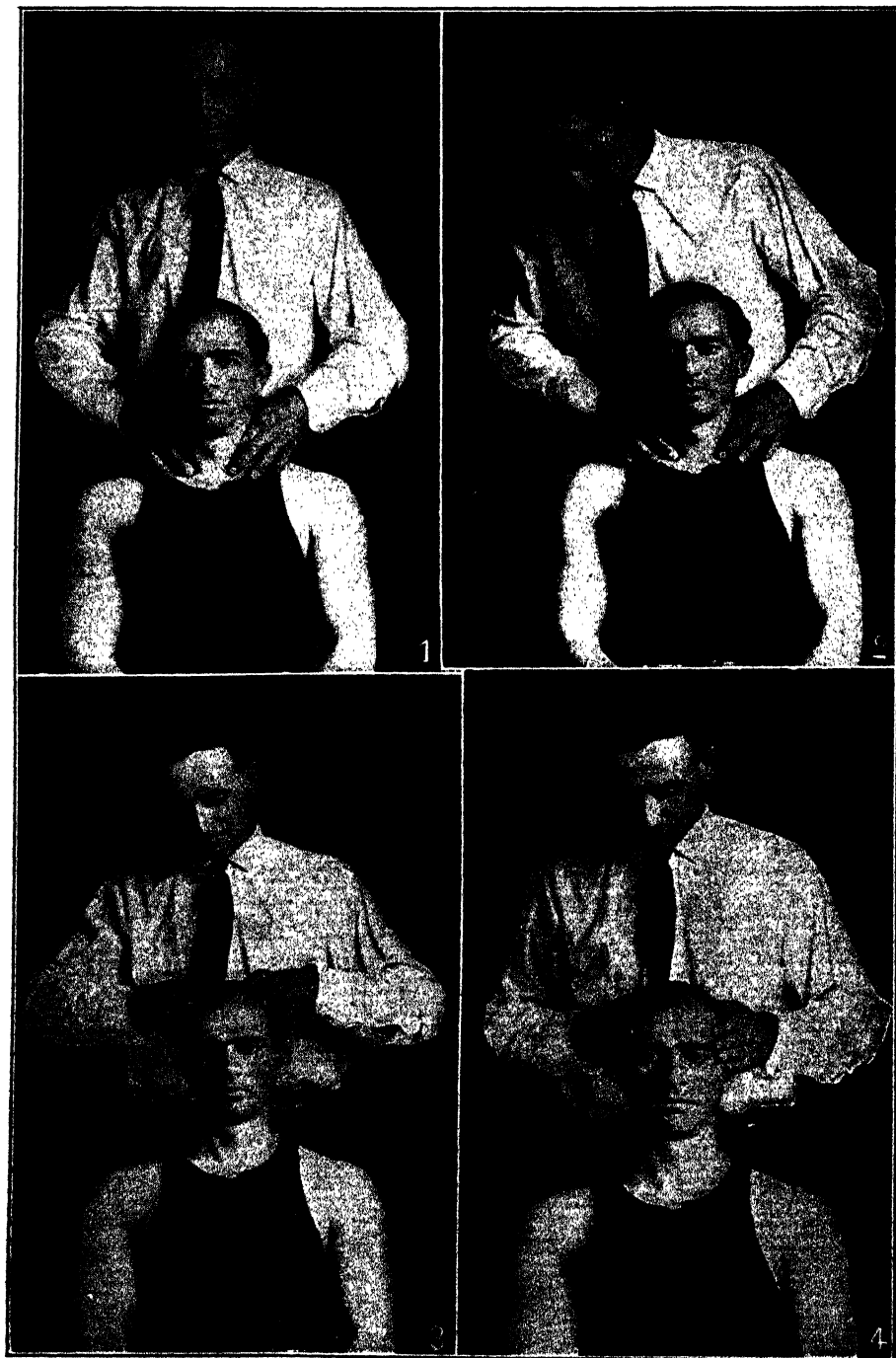
The above general description, while not by any means complete, is yet sufficient to give one a clear idea of what is essential in this particular method of treating the body. Remember first to move the joints in every possible direction with

the tissues completely relaxed and then to perform similar movements with the tissues tense, thus offering a slight resistance.

We have given these particular treatments in my institution for a considerable time, and nearly all the patients who have taken them maintain that they are far more satisfactory than any form of treatment they have ever previously experienced. They maintain that they seem to stimulate the tissues, re-vitalizing and energizing the body in a remarkable manner. We have had many patients here who had taken every other kind of treatment known and they insist that these methods are in every way more effective than any they have tried before. It is easy to understand the very marked superiority of these particular treatments when the fundamental theory upon which they are based is carefully considered.

On the following pages appear illustrations and descriptions of the most important movements employed in Mechanical Physcultopathy. Illustrations 1 to 87 show movements which may best be applied by an operator or attendant. Movements 88 to 124 may be administered without assistance.

Physcultopathic Treatments A to N are of great value in combating various phases of diseases, and are referred to under their proper numbers in the Instructions for the Treatment of All Common Diseases, which appear in the present and in the following volume of this work.



Full description of movements appears on opposite page.

MOVEMENTS 1 TO 4

No. 1. Shows the position of the hands for treating the blood vessels, the muscular and other tissues of the neck, the thumbs being placed on the back of the neck and the fingers on the front part, kneading and rubbing.

No. 2. Shows the method of treating the blood vessels, nerves and lymphatics between the head and the body, in the neck. This movement consists of a combination of vibration, friction and kneading, and extends from the clavicle in an upward direction to the angle of the jaw.

No. 3. Nerve compression treatment of the scalp. The fingers are spread out, and with a kneading motion of each finger the operator works over the whole surface of the scalp, combining pressing with the kneading movement.

No. 4. Compression and relaxation of the temples on the sides of the head, similar to that of the scalp in No. 3.



Full description of movements appears on opposite page.

MOVEMENTS 5 TO 8

No. 5. A movement for the neck. The operator places the left hand on the chest of the patient and the right hand on the forehead, pressing the head of the patient backward as far as it will go, then giving a short, vibrating, springy motion to the head when the limit is reached. For cervical spine and front of neck. Great care is necessary in giving this treatment.

No. 6. The same as No. 5 from a different view.

No. 7. A forward movement of the head. The operator places the right hand on the first dorsal vertebra and the left on the top or back of the head of the patient, pressing the head as far forward and downward as possible. For cervical spine and other tissues in back of neck.

No. 8. Supplying pressure to the front part of the head with both hands and pressing downward. For the cervical spine and neck tissues generally. If considerable pressure is given care must be taken to see that the head is not bent backward.



Full description of movements appears on opposite page.

MOVEMENTS 9 TO 12

No. 9. Stretching the neck. The left hand is placed underneath the chin and the right at the back of the head, and the patient is raised up with pressure so as to stretch the neck in this manner. As much stress should be applied as possible without straining or causing discomfort.

No. 10. This also consists in an upward stretch of the neck and spine by alternating from side to side. The operator clasps the head and chin of the patient, as in No. 9, and twists the head from side to side with an upward pressure, also rotating the head from right to left and forward and back.

No. 11. Same treatment as No. 10, showing a different phase of the movement.

No. 12. This shows the use of the right hand in stimulating the nerves and tissues lying at the back of the head just at the base of the skull, kneading, rubbing and vibrating; the left hand is placed on the forehead.



13



14



Full description of movements appears on opposite page.

MOVEMENTS 13 TO 16

No. 13. Rotation of the head. The neck of the patient is grasped by the left hand of the operator and held loosely while the right is applied to the forehead, giving a rotary movement, with the neck as the pivot; at the same time treating the neck with the left hand as he proceeds with the rotation. For cervical spine and all muscles, ligaments and tissues of neck.

No. 14. First press the head back as far as possible, grasping the chin with the left hand and the back of the head with the right, then in this position twist the head as far as possible, first to one side, then to the other. This must be done gently.

No. 15. Position for pressing the head sideways; place the left hand on the left shoulder and the right hand on the side of the head above the ear, pressing the head to the right as far as possible. The same to the left, alternating.

No. 16. This movement consists first of pressing the head sideways as far as possible; when the limit is reached the left hand is placed under the side of the chin, the right over the ear and the head is twisted towards the left. Same to the right, reversing movement and alternating. Do gently.



Full description of movements appears on opposite page.

MOVEMENTS 17 TO 19B

No. 17. Massaging the eyes, working with the thumb and fore finger, from the corners of the eyes toward the center. Do not rub across the eye, but work toward the center from the corners.

No. 18. Method of treating double chin. The operator with both hands takes hold of the chin of the patient bringing the crease between the two chins over the end of the chin and working both ways, forward and across so as to stretch the muscles and tissues. Treatment also consists in kneading and massaging the under side of the jaw.

Nos. 19a, 19b. Shows abduction and adduction of the feet with resisting exercise. In 19a the operator grasps the feet on the outside; the patient is told to press outward, the operator resisting. In 19b the hands are changed to the inside of the feet and the patient is told to press the feet inward, the operator meanwhile resisting. Especially for joints of ankle and knee—also muscles and ligaments of leg. All movements with resistance should begin lightly and increase as the patient's strength increases.



Full description of movements appears on opposite page.

MOVEMENTS 20 TO 21B

No. 20. Stretching exercise. The patient seizes the head of the table, the operator grasps the legs firmly around the ankles and stretches the entire body.

No. 21a. This is also a stretching exercise, though chiefly affecting the ankles, knees and lower legs generally. While the operator stretches the legs he also turns the feet inward with a twisting motion of the legs.

No. 21b. The same as 21a, except that the feet are turned and twisted outward, as they are stretched. This must be done gently with women, or where there is hernia.



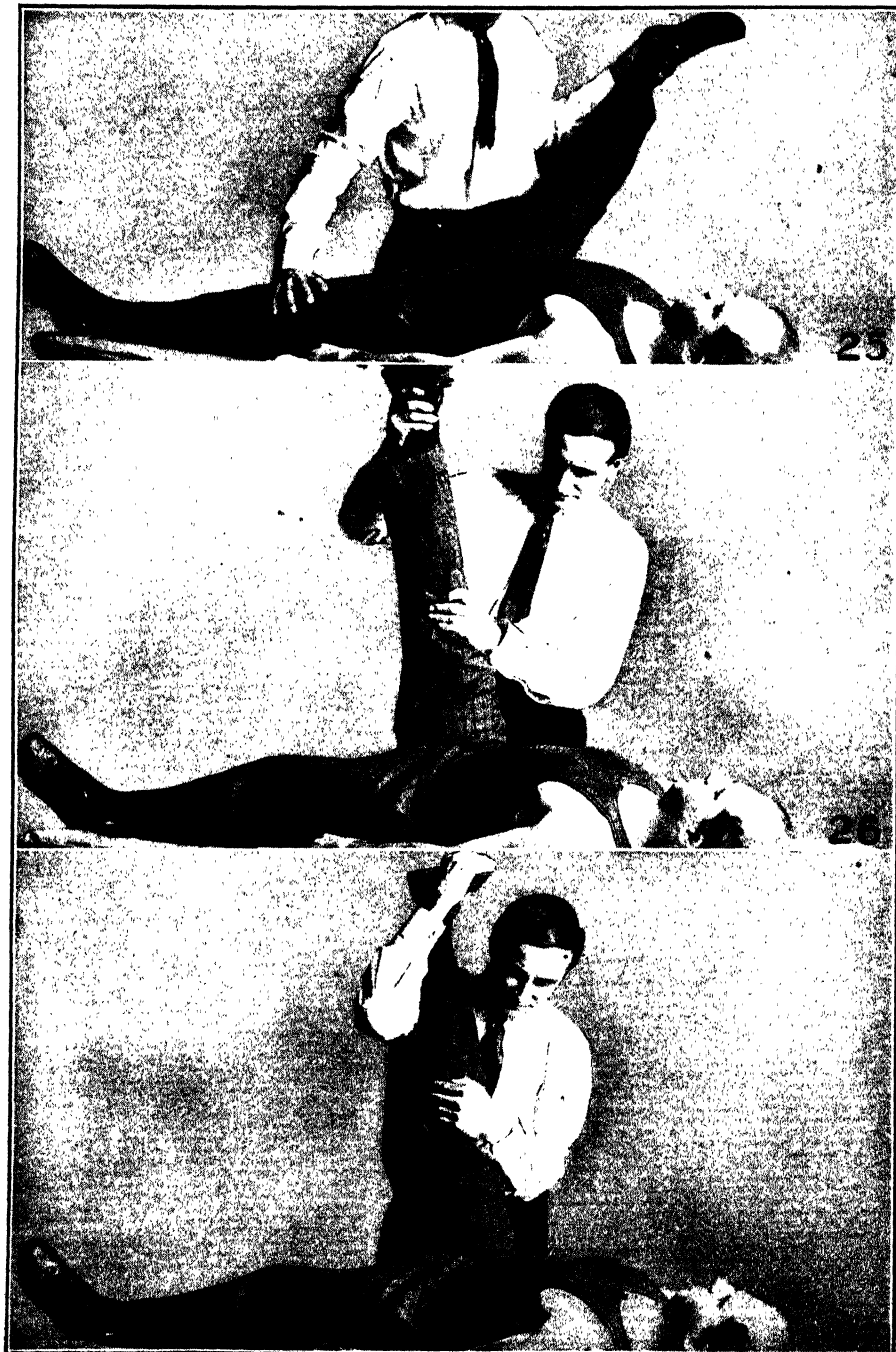
Full description of movements appears on opposite page.

MOVEMENTS 22 TO 24

No. 22. With patient lying face downward, the operator presses on the gluteal muscles with the left hand; with the right hand grasping the patient's leg by the knee, the leg is raised and rotated. Meanwhile operator should press hard with the left hand on the gluteal region. For hip joint, and muscles, and ligaments of the hip generally. Same with other leg.

No. 23. With patient lying face downward, operator grasps both legs with the right hand, with the left hand placed on the small of the back; the lower half of the body is then rotated. For lumbar region of back, and to some extent the dorsal spine. Gauge the height by the spinal flexibility.

No. 24. With patient reclining on back, operator grasps the right ankle with the right hand, the left hand resting on the pelvic bones; the leg is then passed over the opposite leg of patient as far as possible. Repeat on the opposite side, with the other leg.



Full description of movements appears on opposite page.

MOVEMENTS 25 TO 27

No. 25. With patient lying on the back, the right leg is raised outward and upward to a right angle with the body; the right hand of the operator resting on the stationary knee, the left hand grasping the ankle of the right leg. Same movement with the opposite leg. For hip joint muscles, ligaments and other tissues.

No. 26. The leg is grasped at the ankle with the right hand, the left hand on knee; the leg is raised at right angles to the body and pushed upward as far as it will go. Rest and repeat several times. Same movement with the other leg. For the hip.

No. 27. With patient lying on the back; the leg is raised at right angles to the body, the left hand grasping the knee, the right hand, the toe; when the leg has reached position as far as it will go, pull down on the toe. The purpose here is to stretch the sciatic nerve and muscles. Repeat with other leg.



Full description of movements appears on opposite page.

MOVEMENTS 28 TO 30

No. 28. Shows resisting movement with the leg raised as high as possible; patient is told to press downward, the operator resisting. This should also apply when raising the leg, in which case the hand should be placed on the upper side of the leg and the patient asked to raise it, the operator again resisting. The same exercise should be taken with the other leg.

No. 29. With patient lying on the back, the operator presses hard on the toes, stretching the muscles and ligaments on the interior portions of the instep.

No. 30. Resistance exercises for the legs. The lower part of the foot is grasped by the operator, and the other hand placed on the knee. The patient is told to draw his leg upward, the operator meanwhile resisting, and when the leg has been drawn up as far as possible the patient is told to press downward, straightening the leg, the operator again resisting. Same with the other leg.



Full description of movements appears on opposite page.

MOVEMENTS 31 TO 31B

No. 31. A resisting exercise for the legs; abduction and adduction of the legs, patient resisting operator.

No. 31a. A movement for the ankle. The operator grasps the leg above the ankle with one hand and rotates the toe with the other, while pressing down on the toe. Same treatment with each ankle.

No. 31b. The foot is pressed backward as far as possible, as illustrated. The operator grasps the toe with one hand and with the other the heel, and rotates the foot in a small circle.



Full description of movements appears on opposite page.

MOVEMENTS 32C TO 34A

No. 32c. The operator grasps the leg just above the ankle with the left hand, and the foot with the right hand, bending foot over sideways as far as possible, and rotates in a small circle. Bend over to other side and rotate. Same treatment with each leg.

No. 33. Shows operator kneading and working on the leg near the knee cap. The operator places his knee on the table, resting the leg of the patient upon it as illustrated. The treatment consists of kneading and pressing combined. Same with each leg.

No. 34a. Resisting exercise for the upper leg, abductor muscles. The feet of the patient are placed close together and the knees are abducted, the operator resisting.

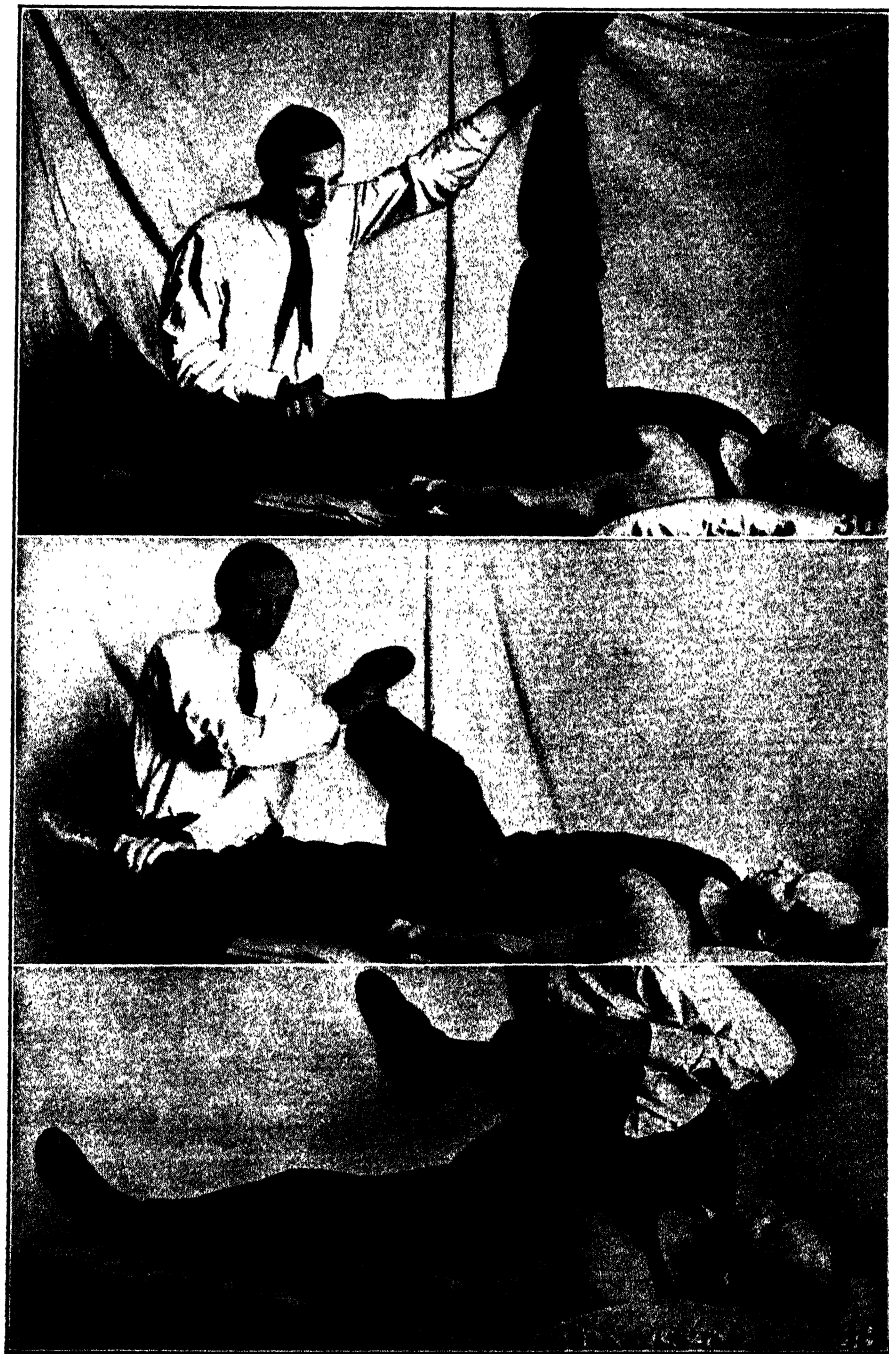


Full description of movements appears on opposite page.

MOVEMENTS 34B TO 35B

No. 34b. Same as 34a, except that the knees are adducted, the operator's hands being placed inside the knees to resist the movement.

Nos. 35a, 35b. Shows a leg movement. The operator sits astride the table, grasping both legs of the patient above the ankles, the legs are raised to right angles to the body and then abducted as far as possible, as shown in 35b, then back to original position. For hips and upper legs.



Full description of movements appears on opposite page.

MOVEMENTS 36 TO 38

No. 36. With operator sitting astride the table, one leg of patient is held downward with the right hand, the other leg is forced to a position at right angles to body of patient, the leg being held rigid. Same movement with other leg.

No. 37. Shows alternating movement for the legs. The operator sitting on table crosses legs of patient and twists them in the manner illustrated, first the left over the right and then the right over the left.

No. 38. Flexing the thigh on the abdomen. The operator grasping the knee of the patient with his left hand, and the instep with the right hand, presses down on the knee, flexing the thigh as tightly as possible on the abdomen; then back to position again. Same movement with other leg.



Full description of movements appears on opposite page.

MOVEMENTS 39 TO 41

No. 39. The leg is first placed in the flexed position, the left hand on the knee, the right hand grasping the smaller part of the instep; the leg is then twisted first to the right and then to the left. For the knee joint, ligaments and other tissues. Do it carefully.

No. 40. With patient lying on face, the leg is flexed backward tightly at the knee, being forced back as far as possible, the patient resisting the movement. Same treatment with both legs.

No. 41. With patient lying on back and grasping the sides of the table firmly, the feet and legs are drawn up over the head as illustrated, keeping the knees straight; the legs are then pressed downward for stretching the spine. This movement must be regulated according to the spinal flexibility of the patient. Do not attempt it in cases of high blood pressure.



Full description of movements appears on opposite page.

MOVEMENTS 42 TO 44

No. 42. With patient lying on back, and grasping the table firmly at sides with both hands, the legs are brought over the head as in No. 41, with knees held rigid. The left leg is then twisted underneath the right, the right being raised a little; the whole body is then twisted to the right. Same movement to the left, legs reversed.

No. 43. Deep compression applied to the spine. The first two fingers of the right hand are placed successively one on each side of each spinal process, the left hand pressing down upon the right hand with a series of short compressing movements, the entire length of the spine. Press gently, but firmly between each two spinal processes until all the vertebrae have been treated.

No. 44. Vibratory friction applied to the spine with the tips of the fingers, and compressing. This treatment should be given from the base of the neck down the full length of the spine, affecting all of the vertebrae.



45



46



Full description of movements appears on opposite page.

MOVEMENTS 45 TO 47

No. 45. Kneading the entire back with outstretched fingers, combined with the vibratory movement. An effective method of improving the circulation.

No. 46. Full hand pressure on the spine; one hand is placed above the other, and pressure applied successively to the spinous processes all the way down.

No. 47. Shows percussion of the spine by striking with the clenched right fist upon the back of the left hand, the latter being passed over all the spinous processes successively, and also over the transverse processes of the vertebrae. This should not be hard enough to hurt.



Full description of movements appears on opposite page.

MOVEMENTS 48 TO 50

No. 48. A twisting movement applied to the spine. One hand of the operator is placed on the top of the other, laid upon the back, then twisting from right to left and left to right, thus stretching all the muscles of the back.

No. 49. A rolling friction movement with the hands spread out, pressing forward with one hand and back with the other, treating the whole of the back in this manner. There should be considerable pressure.

No. 50. Deep kneading of the small of the back between the twelfth rib and the pelvic bone, going across the back from one side to the other.



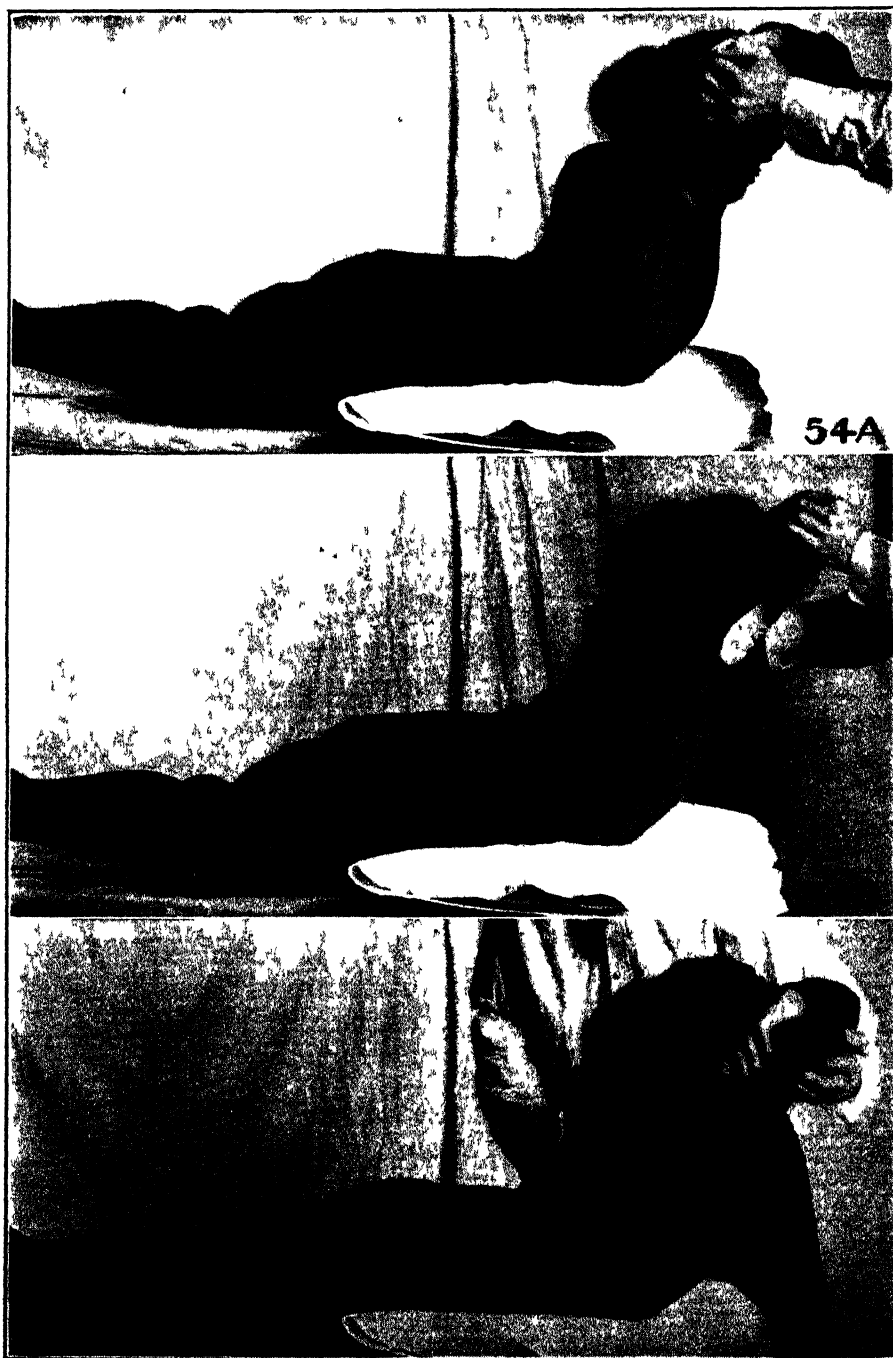
Full description of movements appears on opposite page.

MOVEMENTS 51 TO 53

No. 51. A shaking treatment applied to the spine. Grasping the spinous processes between the thumb and the fingers and vibrating sideways with a shaking movement, starting at the neck and going down to the end of the spine.

No. 52. Pressing sideways on the spinal processes, pulling with the fingers of one hand and pressing with the thumb of the other. The treatment extends the entire length of the spine; it should be applied as a vibratory movement as well.

No. 53. Kneading and vibratory treatment of all the muscles of the back with fingers and thumbs. This should be applied with a kind of rolling movement across the back, in a transverse direction.



Full description of movements appears on opposite page.

MOVEMENTS 54A TO 55A

No. 54a. The patient, lying face downward, is placed with the shoulders extending over the end of the table; patient folding arms and resting forehead on forearms; the operator, grasping the patient by the elbows, raises the upper body as high as possible. For the dorsal region of spine and the chest.

No. 54b. Commencing with above position the patient is moved as far to the left and then as far to the right as possible.

No. 55a. The patient first assumes the position described in No. 54a; operator standing at side of patient, grasps the arms with the left hand, raises patient as high as easily possible, and with the right hand kneads and presses on the muscles of the spine and entire back.

NOTE—These movements and 55b and 56 should be performed with much care in cases of hernia, recent abdominal operations, abdominal adhesions or of prolapse of abdominal organs.



Full description of movements appears on opposite page.

MOVEMENTS 55B TO 57

No. 55b. Similar to 55a with the exception that the body of patient is pulled as far to the left and then as far to the right as possible, while kneading and pressing with the right hand.

No. 56. With patient lying face downward, head and shoulders extending well over end of table, neck firm, hands interlaced back of neck, elbows out straight; operator grasps patient's arms and raises upper body as high as possible.

No. 57. With position described above, operator grasps patient by left arm and twists body as far to the right as possible, meanwhile pressing with the other hand on the spine and muscles of the back. Same movement to left.

NOTE—"Neck firm," frequently referred to in movements on following pages, means the position of the hands back of neck or lower part of head, as shown in illustrations 56 and 57, opposite. It does *not* mean neck tensed.



Full description of movements appears on opposite page.

MOVEMENTS 58 TO 60

No. 58. With patient in same preliminary position as in No. 57, the near arm is grasped by operator and the body pulled as far to the side as possible, the other hand of the operator working on the muscles of the side and back.

No. 59. With patient lying on table, face downward, left hand placed at the back of the neck; the operator passes left hand through left arm of patient; he then presses between the shoulders with the right hand and with the other raises up, applying vibration to the spine.

No. 60. With patient sitting close to the end of the table, with legs strapped to it, the upper body is bent backward and forward, and then rotated as much as possible; now with patient's neck firm, operator presses downward on the shoulders, keeping the elbows of patient straight. The purpose is to stretch the abdominal muscles and tissues. See note on page 1559.



Full description of movements appears on opposite page.

MOVEMENTS 61 TO 63

No. 61. Patient in position similar to that in No. 60, except lying on side, with neck firm; operator with one hand on the hip and the other under the armpit presses patient down, stretching hip and lumbar region.

No. 62. In this movement the patient from a sitting position with neck firm is bent sideways over the operator's knee as far as possible, stretching the muscles of the side and the lumbar region.

No. 63. With patient sitting at end of table. The upper body lowered and allowed to rest with the small of the back on the hand of the operator, in a relaxed position; the operator with a few gentle upward jerks of the hand springs the spine. See precautionary note on page 1559, for these three movements.



Full description of movements appears on opposite page.

MOVEMENTS 64 TO 66

No. 64. With patient lying face downward and resting on a pillow, legs strapped down and shoulders extending over the end of the table, neck firm, operator grasps patient by the elbows and twists the upper body first to the right and then to the left as far as possible. See note on page 1559.

No. 65. With patient sitting on table with legs strapped down, neck firm, operator takes the hold illustrated, his arms passing under the arms and hands over back of patient's neck. Operator forces patient first to the left, downward, backward and to the right; it is a rotating and twisting movement as well.

No. 66. With patient sitting on table, operator, behind, grasps her by the inside of the shoulders, patient's arms extended and resting on elbows of the operator; the shoulders of the patient are next pulled backward as far as possible, and then the arms rotated; operator meanwhile pressing on the front of the shoulders.



67



68



69

Full description of movements appears on opposite page.

MOVEMENTS 67 TO 69

No. 67. A resisting movement for the arm. The operator grasps patient by the left hand, with the other hand grasping arm of patient above and underneath the elbow; the arm is then flexed as tightly as possible, the patient resisting the movement. Same with other arm.

No. 68. A twisting movement of the shoulder and upper arm; operator grasps the hand of patient, holding the forearm at right angles to the shoulder and grasping the elbow with the right hand; the arm is then twisted forward and backward as far as possible. Perform this movement carefully.

No. 69. With patient sitting on end of table, with neck firm, hands interlaced back of head, operator stands behind, placing one hand on the top of one shoulder with the other hand underneath the other and presses patient sideways as far as possible. Same to the other side.



Full description of movements appears on opposite page.

MOVEMENTS 70 TO 73

No. 70. With patient sitting on table as above, operator grasps the fore part of one shoulder with one hand, pressing on the back of the opposite shoulder with the other hand, twists the body of patient as far as possible. Same to the other side, reversing hands. For dorsal spine, sides and stomach.

No. 71. With patient sitting on table, operator takes "full Nelson" hold of patient and lifts up, pressing chin down against the chest at the same time. For cervical spine. Do this with care.

No. 72. This is a shoulder movement. The operator grasps patient on the front part of shoulder with right hand, and with the other hand pressing from the back on the scapula forces the shoulder back and the scapula forward. This is an effective movement for assisting in remedying round shoulders. Same treatment for other shoulder.

No. 73. Operator, grasping the shoulder of the patient between both hands, imparts a little motion by working the hands in a rotary motion over the shoulder. Same on both sides.



Full description of movements appears on opposite page.

MOVEMENTS 74 TO 77

No. 74. Stretching the arm. The operator places one hand on the shoulder and with the other, grasping the hand firmly, pulls the arm outward.

No. 75. A twisting movement of the arm from the wrist to the shoulder, first one way and then the other. Twist as far as possible without causing discomfort or strain.

No. 76. With patient sitting on table, neck firm, operator grasps elbows, forces them back as far as possible.

No. 77. With patient sitting in a relaxed position on table, operator, grasping the shoulders on each side, raises and lowers them.



Full description of movements appears on opposite page.

MOVEMENTS 78 TO 81

No. 78. With the same initial position as in No. 76, operator, standing behind, passes arm on the inside of left arm, taking hold illustrated with the left hand, the right pressing on the right hip or pelvic bone of patient; operator pulls patient backward with a twisting movement of the left arm, the right holding the lower part of the body stationary. Same on the other side, hands reversed.

No. 79. With patient sitting on table, operator, standing behind, grasps the left shoulder with right hand from the front, and with the left hand grasping the fore part of the arm, the latter is rotated, being raised, pressed forward, downward and drawn backward in rotation. Same with other shoulder.

No. 80. With patient sitting on table, operator stands at side, grasping left arm of patient at the elbow with left hand, with right hand on shoulder, then presses the arm as far forward as possible and rotates across the body in front, meanwhile holding back the shoulder with the right hand. Same with other arm.

No. 81. With patient sitting on table, operator stands behind, grasping the left shoulder of patient with right hand, and the wrist with the left hand, then pulling back the arm as far as possible, holding the shoulder forward in position with the right hand. Same with right shoulder.



Full description of movements appears on opposite page.

MOVEMENTS 82 TO 84

No. 82. Kneading with both hands the muscles of the shoulder and upper arm, and also the muscles, veins and lymphatics in the armpit.

No. 83. Resistance exercise, flexing the wrist backward. The operator grasps the wrist of patient with right hand and the tips of the fingers with the left; patient is told to bend and flex the wrist, the operator resisting meanwhile. Same with other hand. This should be executed by bending hand forward, backward and in all directions.

No. 84. Similar to No. 83, except that the hand is bent to position shown to start with, then raised or straightened against the moderate resistance of the operator. Both hands. Same from all directions.



Full description of movements appears on opposite page.

MOVEMENTS 85 TO 87

No. 85. Stretching the neck. Operator grasps the patient's chin with right hand, placing left hand at back of neck, then pulls backward, moving the head first to one side and then to the other, and finally rotating the head, stretching at the same time. This and the two following treatments are very effective for stimulating the cervical region of the spine.

No. 86. With patient lying on back, operator crosses his arms, pressing the left hand on the front part of the patient's right shoulder, the right hand on the front part of the left shoulder, then raising the head of patient as high as possible.

No. 87. With patient lying on back on table, operator places the right hand under the neck and on the front of the patient's left shoulder; his left hand on the side and back of the head. He then raises right arm, holding the head firmly with the left and pushes the head upward at an angle with the body, stretching the neck at an angle. Some care should be used in this movement to avoid strain.



Full description of movements appears on opposite page.

SELF-APPLIED MOVEMENTS FOR STRENGTHENING THE ENTIRE BODY.

MOVEMENTS 88 TO 91

IMPORTANT.—It should be remembered that in each of these exercises the first movement must be made with all parts absolutely relaxed, the idea being to stretch the ligaments, tendons, muscles and other tissues as much as possible. Keep this fact in mind; it will save the necessity of repeating the same instruction under each illustration.

It is also important to keep distinctly in mind that one of the first principles in the practice of these movements, is to carry each movement to its extreme limit, and after having reached this limit, every effort should be made to carry it still farther. It is this additional effort that is of such extreme value in stretching and strengthening unused tissues.

No. 88. FINGERS. Manipulating the joint that joins the little finger to the hand. The first movement is to bring the finger around in a circle, first in one direction, and then in the opposite direction; then twist the finger to the right and to the left. Then the same movements should be repeated while a slight resistance is offered. The thumb and all of the fingers should be treated in the same way if there is special need for improved circulation and increased strength of these parts.

No. 89. WRIST. Stretching the ligaments, tendons and tissues of the front part of the hand and forearm. With all parts relaxed, push the left hand back as far as possible with the right hand, several times, as shown in illustration. Follow with the same movement, with left hand resisting. Same treatment with hands reversed, operating upon right wrist.

No. 90. WRIST. Stretching the ligaments and other tissues of wrist and forearm. Grasp the left hand, as shown, with the right, and twist several times as far as possible to the right; then to the left. Same movement with hands reversed. Remember that the twisting motion must first be made with all parts relaxed, and afterward with resistance.

No. 91. WRIST. Bending the wrist to the sides. Grasp the left hand with the right, as illustrated, and bend the wrist several times far to one side and then far to the other, stretching the relaxed tissues as much as you can, without pain. Same movement with hand resisting. Same treatment with position of hands reversed.



94



95

Full description of movements appears on opposite page.

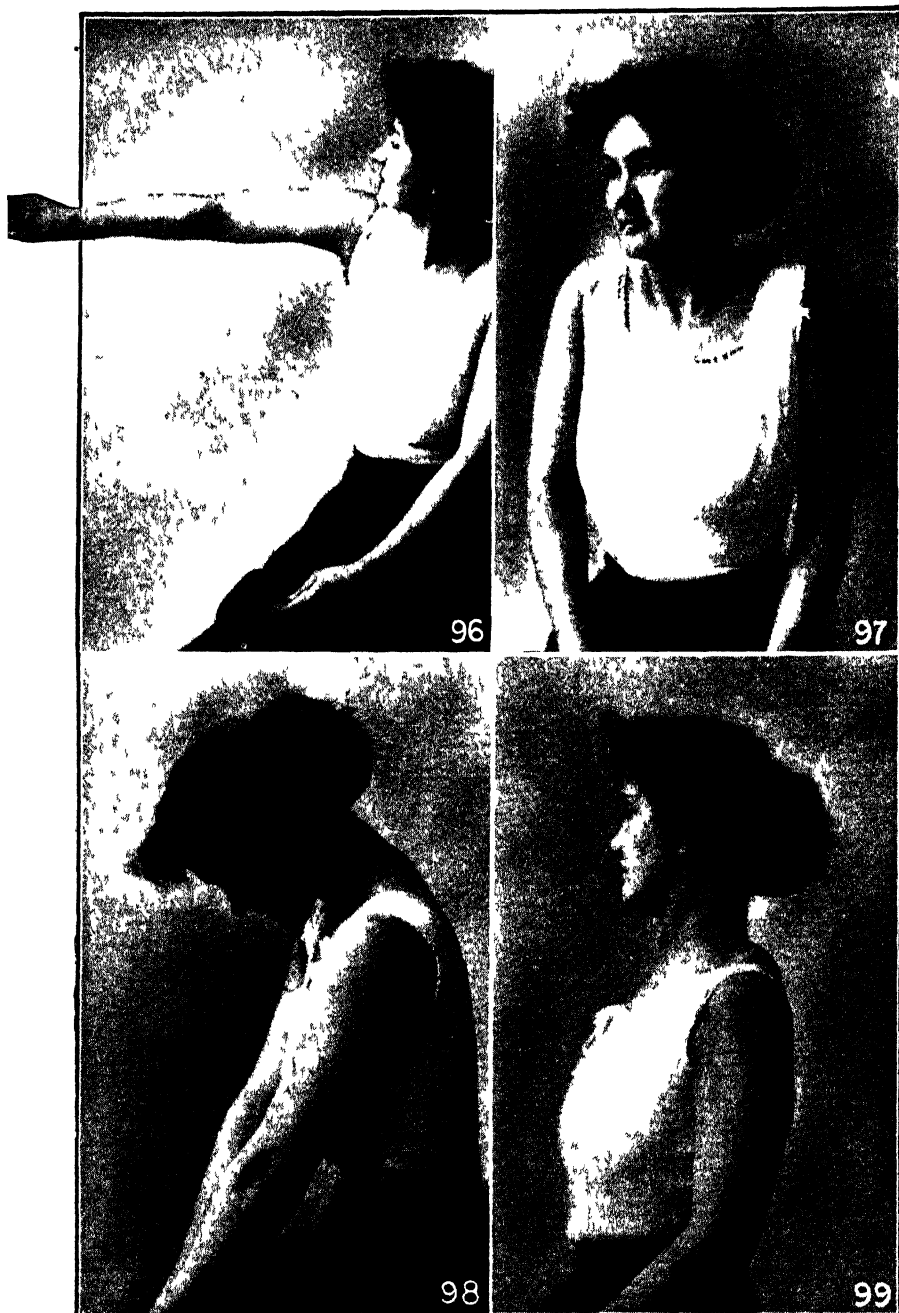
MOVEMENTS 92 TO 95

No. 92. **WRIST.** Stretching the tissues on the back part of the wrist and forearm. Allow the relaxed hand to fall in the manner indicated; then press back as far as possible several times with the right hand. Same treatment with hands reversed.

No. 93. **ELBOW JOINT.** For limbering the elbow joint and stretching adjacent tissues. Grasp the left arm with the right hand and flex or bend the forearm back as far as possible several times, with muscles completely relaxed. Now, while the arm is in this position, move the left wrist far over several times to the right and to the left. Same treatment with position of arms reversed.

No. 94. **ELBOW JOINT.** Bend left arm until forearm is almost in a perpendicular position, then push left arm several times with right hand far over to the left, as shown in photograph, and then bring far over to the right. Same treatment with position of arms reversed.

No. 95. **ELBOW JOINT.** Grasp left forearm with the right hand firmly, as shown in illustration. Now twist, as indicated, as far as possible inward several times; then twisting outward similarly. Same treatment reversing the position.



Full description of movements appears on opposite page.

MOVEMENTS 96 TO 99

No. 96. **SHOULDERS.** With arm straight out from the shoulder, as indicated, twist wrist and arm in one direction as far as you possibly can; then twist similarly in the opposite direction. Repeat several times and always make additional attempts to twist still farther after the movement has apparently reached its limit. Same treatment with other arm.

No. 97. **SHOULDERS.** Raise shoulders as high as you can, as shown in illustration; now holding the shoulders high up, bring them far forward; then far backward several times. A variation of this movement is to move the shoulders in a circle, first backward and upward, then forward and downward; then reverse the movement, making the circle in the opposite direction.

Nos. 98, 99. **SHOULDERS.** With shoulders down as far as possible, bring them far forward as illustrated in photograph No. 98; then keeping the shoulders continuously down as far as you can, move them far backward, to position shown in No. 99.



Full description of movements appears on opposite page.

MOVEMENTS 100 TO 103

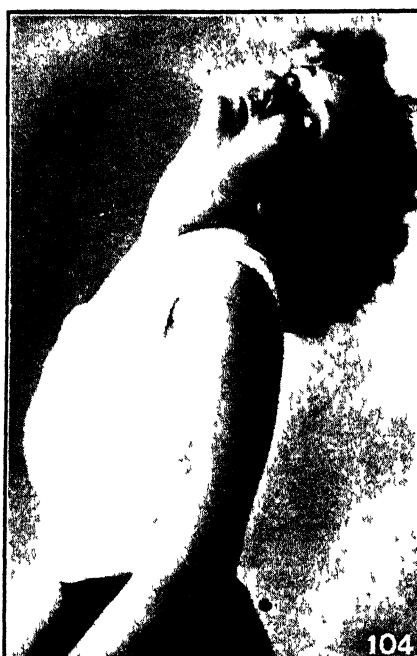
THESE NECK MOVEMENTS VIGOROUSLY BRING INTO ACTIVE USE THE CERVICAL AND UPPER DORSAL REGIONS OF THE SPINE.

No. 100. NECK. Twist head as far as possible to the right; then as far as possible to the left. Repeat several times, and make an effort to move it still farther when the apparent limit is reached. These attempts should be as vigorous as possible without causing discomfort or pain.

No. 101. NECK. Allow the head to bend far over to the right side, making an effort to rest head on the shoulders; then bring the head far over to the left in same manner. Repeat several times.

No. 102. NECK. Bring the head far forward, stretching the back of the neck and endeavoring as nearly as possible to rest the chin on the chest, pressing the chin down vigorously. Repeat several times. The head should if possible be brought much farther forward and down than the position shown in this photograph.

No. 103. NECK. Bring the head far backward, making an effort to bring it still farther back when having reached the apparent limit of the movement, as in previous cases. Make these efforts very vigorously, and repeat several times.



104



105



106



107

Full description of movements appears on opposite page.

MOVEMENTS 104 TO 107

No. 104. NECK. Bring head far backward, as in the preceding movement, and while in this position, turn head far to the right, then far to the left. Repeat until fatigued. Do not forget the general instructions in connection with all of these special treatments.

No. 105. NECK. First endeavor as nearly as possible to rest the head on the left shoulder. Now while in this position turn the face around to the left, twisting the neck as far as possible. Repeat until tired. Same treatment with position reversed.

ALL WAIST AND BACK MOVEMENTS VIGOROUSLY USE THE LUMBAR AND LOWER DORSAL REGIONS OF THE SPINE.

No. 106. WAIST. While seated in a chair twist the body as far as possible to the left, making an energetic effort to carry the movement to the extreme limit. Then take the same movement, twisting far to the right. Continue until slightly fatigued, alternating from one side to the other.

No. 107. WAIST. Flex arms in position shown in illustration, elbows out. Now twist far to the right, and then far to the left. This is much the same as the preceding movement, the only change being the position of the arms and elbows, which enables one to increase the limit of the movement to a certain extent. Alternate and repeat as before.



Full description of movements appears on opposite page.

MOVEMENTS 108 TO 111

No. 108. **WAIST.** Standing with legs far apart, bend far backward as shown in illustration. After you have apparently reached the limit, try to bend still farther back; relax and repeat several times.

No. 109. **WAIST.** In standing position, keep the knees rigid, bend as far forward as you possibly can; after you have reached the limit of the movement make several attempts to bend still a little bit farther.

No. 110. **WAIST.** Standing with feet far apart, bend first far backwards, as shown in illustration No. 108; now, while in this position, twist the upper part of the body over to the left as far as you can, as shown in photo No. 110. Take the same movement, twisting to the right as far as possible. Alternate and repeat several times.

No. 111. **WAIST.** Bend forward until the back assumes a horizontal attitude; now while in this position twist the body far outward to the right as shown in illustration, then far outward to the left, twisting as far as possible in both directions. Alternate and repeat several times.



Full description of movements appears on opposite page.

MOVEMENTS 112 TO 115

No. 112. *ANKLES.* Crossing the left lower leg over the right knee, grasp the heel of the left foot with the left hand, the toe with the right hand. Now press downward on the toe, twisting the foot as far as you can without pain. Lift upward and twist in the opposite direction as far as possible. Repeat several times. Same treatment with other leg, position reversed.

No. 113. *ANKLES.* With the same initial position as in No. 112, press downward on knee of left leg with left hand as illustrated, and pull the toe upward with the right hand, endeavoring to carry the movement to the extreme limit, and repeating several times. Same movement with other leg, position reversed.

No. 114. For assisting to remedy bow legs, when the defect is mostly due to abnormal articulation of the knee joint, and also invigorating the tissues in and about the joint. Assuming position illustrated, press inward several times with both hands on the outside of knee, as vigorously as possible without causing pain. Same treatment with other leg.

No. 115. For adding suppleness and strength to the knee joint, and for assisting in remedying knock knees. Standing with feet far apart, reach down and with both hands press outward several times upon the inside of the knee, making the treatment as vigorous as possible. Same treatment with other leg.



117



118

Full description of movements appears on opposite page.

MOVEMENTS 116 TO 118

No. 116. **WAIST.** Assume position sitting on the floor, as illustrated, with fingers interlaced behind head; now twist the body far around to the right, and then to the left. In each case make several attempts to go still farther after you have reached the limit of the movement. Repeat several times.

No. 117. **WAIST AND BACK.** Lying prone upon the floor, and clasping hands behind the back, first raise head and chest off the floor, then twist the body from the waist to the left as far as you can, as illustrated, making several attempts, as previously instructed, to bend still farther; then take the same movement, twisting in the other direction. Relax and repeat several times.

No. 118. **WAIST AND BACK.** Lying on floor, face downward, and keeping arms rigid, grasp hands behind; then raise shoulders, chest, head and legs off the floor as high as possible, assuming the crescent position illustrated. Relax and repeat several times.



Full description of movements appears on opposite page.

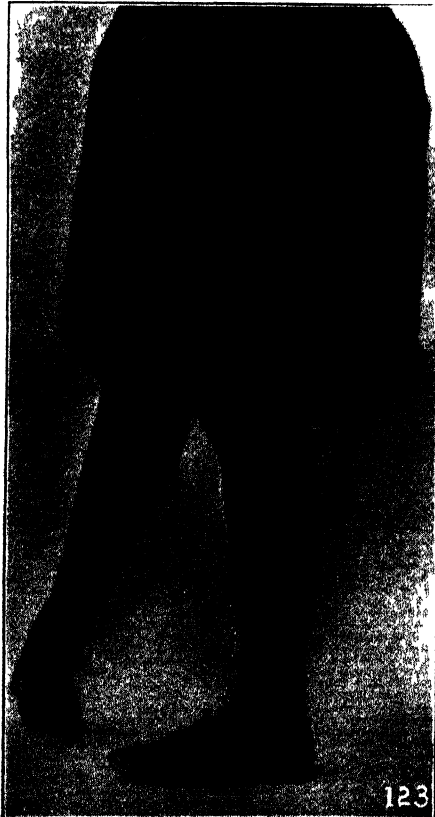
MOVEMENTS 119 TO 121

No. 119. *HIP JOINT.* While lying on the back raise left leg until it is in a perpendicular position, as illustrated. While holding leg in this position twist the leg and foot as far as you can, first in one direction, and then in the opposite, in each case making an effort to increase the limit, and repeating several times. Same treatment with other leg.

No. 120. *KNEE JOINTS.* While lying face downward, bend the knees as much as you possibly can, bringing the feet as near to the hips as possible; then making several attempts to bend the knees still farther after having reached the limit. Straighten legs out as much as possible, then bend knees again, repeating several times.

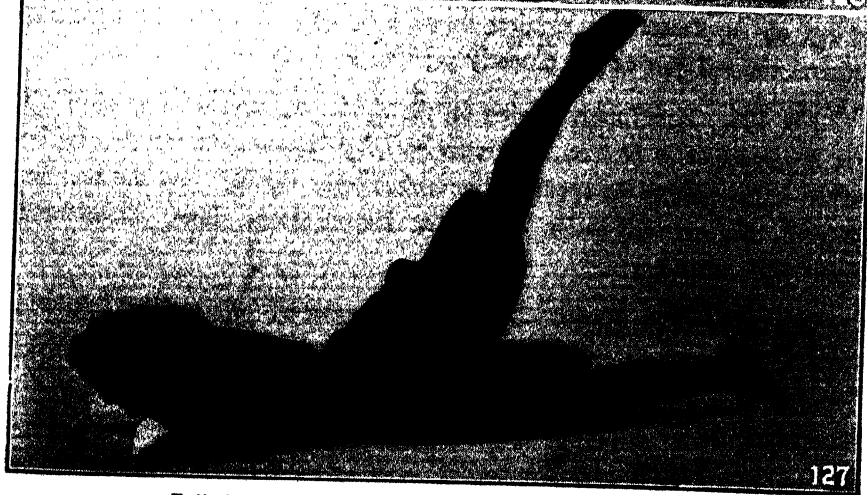
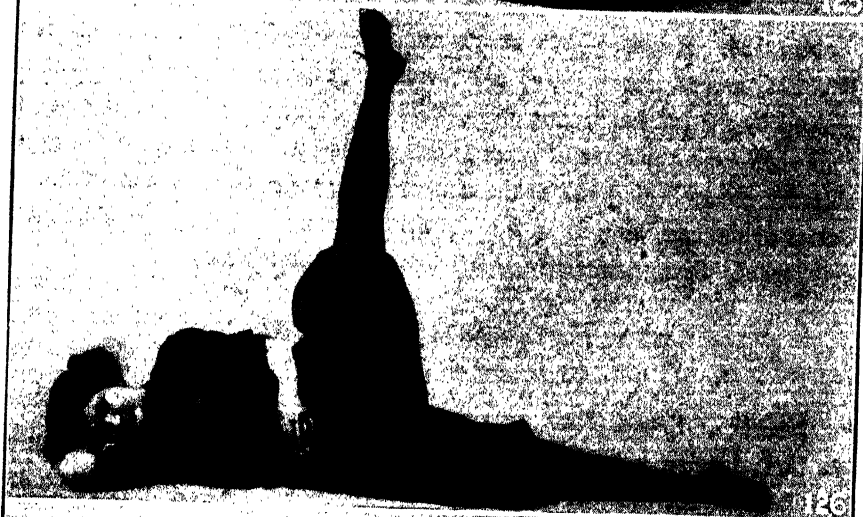
No. 121. *KNEES.* Bring left foot up, bending knee, then catch toe of left foot with left hand and pull upward vigorously, thus accomplishing the extreme flexion of the knee joint. Repeat this, pull a number of times, alternating with the vigorous straightening of the limb. Same treatment with the right leg.

No. 122. KNEE. While seated in a chair raise the left foot from the floor and twist the toe outward as far as you possibly can, make several attempts to twist still farther, and then twist the foot inward as far as you can. Same treatment with other leg.

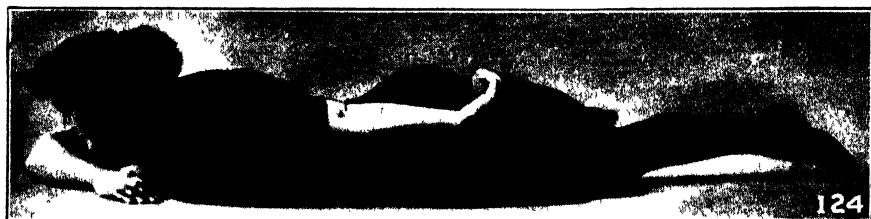


No. 123. HIP JOINT. In standing position make several attempts to twist right leg outward as far around as you possibly can, then inward as far as possible, going to the extreme limit in each movement. Same treatment with other leg.

No. 124. KNEES. See page 1600.



Full description of movements appears on next page.



No. 124. KNEES. This movement is very similar to a previous one, No. 121, except that the legs are reversed. The toe of the right foot is grasped by the left hand, thus giving the knee joint a partial twisting motion. Pull vigorously a number of times in this movement. This is especially valuable for strengthening the ankle, and stretching the tendons and muscular tissues of the calf, as well as for improving the knee. Straighten vigorously and repeat. Same treatment for left knee with right hand.

MOVEMENTS 125 TO 127

Illustrated on preceding page.

No. 125. SPINE, HIPS AND ABDOMEN. From position lying on floor on back, keeping knees rigid, bring legs upward and attempt to touch the toes far over the head, as shown in the illustration. This movement is quite a tax on suppleness and requires unusual agility. Attempt the movement several times if you cannot properly perform it.

No. 126. HIP JOINT. Lying on the right side, raise left leg until it is in a perpendicular position, as illustrated. Try to move the leg still farther when it has reached its apparent limit; then twist the leg from the toe, first inward, then outward as far as possible. Repeat several times. Same movement with other leg.

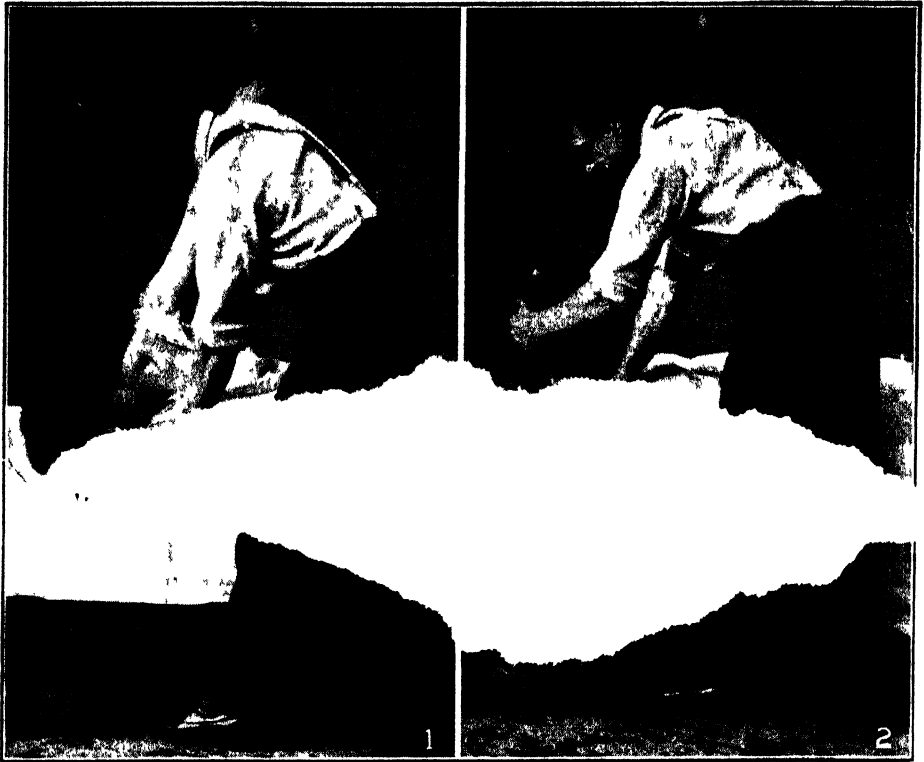
No. 127. HIP JOINT. Lying face downward, bring right leg, with knee straight and rigid, as high as possible. While in this position twist the leg from the thigh far inward and outward. Make an effort to extend the limit each time. Repeat several times. Same movement with other leg.

PHYSICULTOPATHIC TREATMENTS AND EXERCISES FOR INVALIDS.

In the following series of movements I am presenting various Physicultopathic treatments that can be used by or upon those who are not strong enough to take active exercise, but who can be benefited by stimulating the vital functions. Remember that it is even more important for the blood to circulate freely throughout the entire body when one is suffering from disease than when enjoying ordinary health, though naturally one cannot +

used
and
can be taken conveniently
or after retiring.

The greatest must be used in giving these treatments to an invalid or sick person. The patient should be carefully watched, and if at any time there is the slightest sign that would indicate over-exertion, or too much stimulation, the treatment must be immediately discontinued. As a rule, however, the movements will stimulate and awaken the vital energies of the body and the patient should feel considerably stronger almost immediately thereafter. Remember that when giving the movements the patient must be absolutely relaxed except when otherwise instructed; he must neither resist nor in any way assist the movement. All energy that is used for this purpose must be applied by the one who is giving the treatment. If there are abdominal pains of any kind; in fact, if there is severe inflammation in any part of the body, then these movements must be given with the greatest possible care. A feeling of pain, or a distinct feeling of discomfort would indicate in most cases that the movement should be discontinued; though frequently if the movements are made very mild in the beginning, applied with very little stress, the acceleration of the circulation to the affected part will often reduce the inflammation sufficiently for one to take the more vigorous treatment a little later.



TREATMENT A.—PHOTOGRAPHS 1 AND 2.

This treatment may be used on one who is confined to bed, either with chronic or acute ailments which have depleted the strength to such an extent that the patient is too weak conveniently to sit up.

No. 1. From position standing at the right side of patient who is reclining on the back, grasp both shoulders of the patient; now press down on the right shoulder with the left hand, and lifting up the left shoulder with the right hand, twist the upper part of body as far as possible without inconvenience or pain to the patient. Repeat this movement six to ten times. Then apply the same treatment reversed, twisting in opposite direction.

No. 2. Now, place the left hand under the head of the patient, with other hand on the right shoulder, and raise head as far as possible. This should be applied very gently if necessary, but pulling vigorously upon the upper spinal column if no pain or inconvenience is experienced by the patient. Repeat several times. This movement can usually be extended until the patient's chin touches his chest.



TREATMENT A.—PHOTOGRAPHS 3 AND 4.

No. 3. Grasp patient's head in both hands, after having raised the head until the chin nearly touches the chest, and turn with mild pressure far to the right then far to the left; be careful not to use too much force in this movement. Continue until the patient begins to feel a little tired.

No. 4. Place the left hand far up on the right side of patient's head and push head far over to the left, forcing the head very near to the left shoulder; apply the same movement with the right hand on the left side of patient's head, and forcing the head far over to the right shoulder.



TREATMENT B.—PHOTOGRAPHS 1 AND 2.

No. 1. While standing beside and behind patient, who should be reclining face downward, place hands on forehead and lift head far upward. Repeat several times.

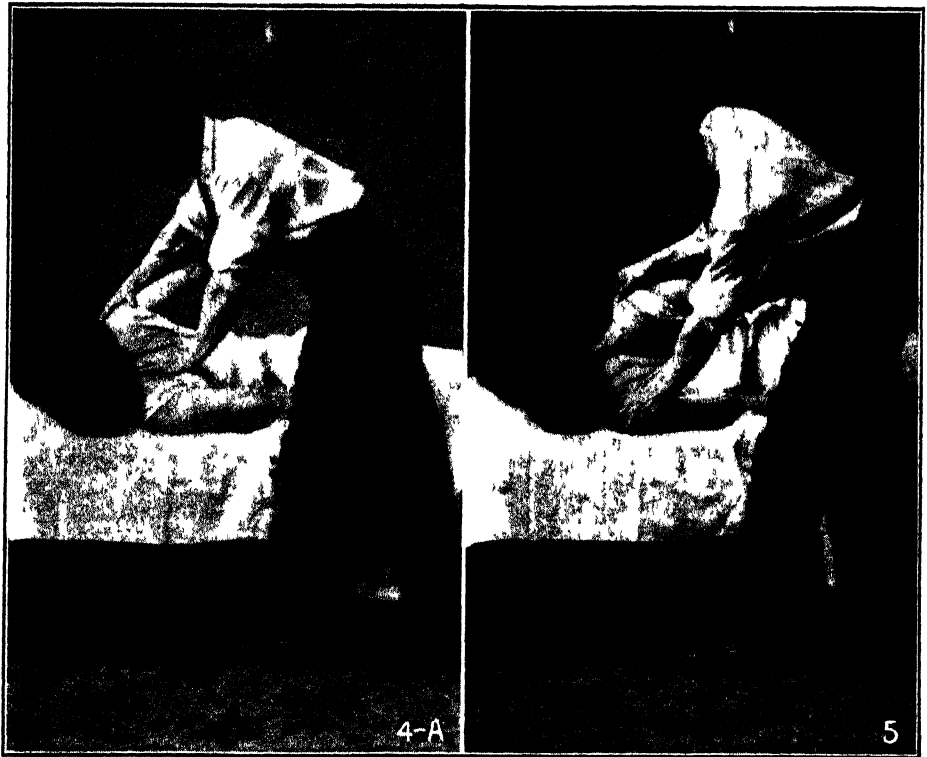
No. 2. Now raise head upward to the limit as in previous movement, and from this position turn head far to the right and then far to the left. Let there be as much stress and stretch as possible without causing pain or discomfort. Repeat several times.



TREATMENT B.—PHOTOGRAPHS 3 AND 4.

No. 3. Place left hand on the left side of patient's head, push head far over to the right near the right shoulder; the same movement should be given with the position reversed.

No. 4. With palm of left hand resting firmly on the spine, grasp right shoulder of patient with right hand and pull straight upward three or four times. The left hand on the spine affords a leverage which makes this movement very effective.



TREATMENT B.—PHOTOGRAPHS 4A AND 5.

No. 4-A. Following up immediately the position to which the right shoulder has been brought in the preceding movement, now raise shoulder far forward and upward three or four times; then move shoulder far downward and forward three or four times; now push shoulder back and forth three or four times. During all these movements, press down vigorously on the spine with the left hand. Now repeat exactly the same movement as in No. 4, with position of hands reversed; that is, with the right open palm pressing vigorously on the spine, raise left shoulder with left hand three or four times and continue the movements described under 4-A.

No. 5. Grasp patient by both shoulders; now pull up with the right shoulder and push down with the left, twisting body from the waist upward; do this three or four times and then repeat, twisting in the opposite direction.



TREATMENT C.—PHOTOGRAPHS 1 AND 2.

This treatment may be given to a patient who is able to sit up in bed without any special discomfort. Begin by giving the movements in Treatment A, using each movement only once or twice, then continue as follows:

No. 1. Grasp the right wrist and hand of patient and twist the arm and shoulder far to the right and far to the left; repeat several times, and then give the left arm the same treatment.

No. 2. Now have the patient sit up in bed in such a manner that you may stand immediately behind. Now with one hand placed firmly on shoulder, with the other push head of patient forward until the chin touches the chest, or as far as possible without discomfort. Repeat several times.



TREATMENT C.—PHOTOGRAPHS 2-A, 2-B, 2-C.

No. 2-A. Now, starting with the preceding movement, twist the head in various ways, similar to the movements of head described in Treatment A and B, for reclining patient. When head is well forward, twist to each side in addition to this.

No. 2-B. Place the hand on the forehead and bring the patient's head as far back as possible, taking care that no pain is experienced by the patient. Repeat several times and then,

No. 2-C. When head has been pulled far back, slowly and gently twist to the right and to the left, as far as possible without causing pain. Repeat, from one side to the other several times.

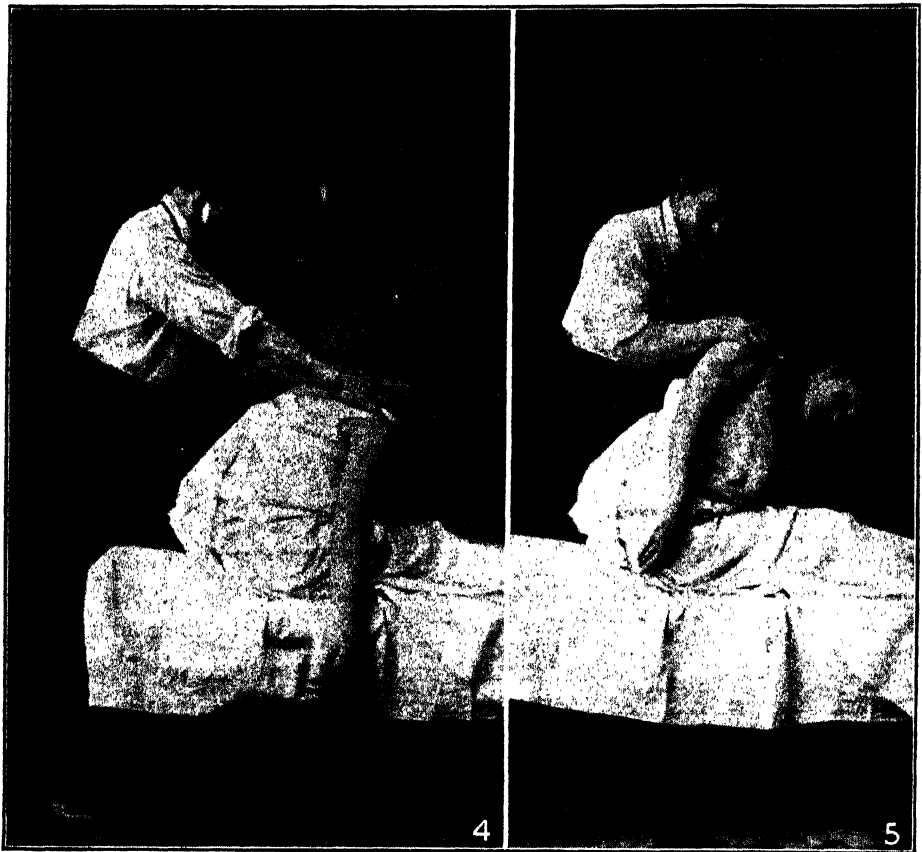


TREATMENT C.—PHOTOGRAPHS 3-A AND 3-B.

No. 3-A. Now grasp the patient by both shoulders and twist the body first far to the right,

No. 3-B. And then, far to the left, repeating the movement several times.

This is a very effective treatment for invigorating and stimulating the lower dorsal and lumbar regions of the spine, and should be carried as far as possible in each movement, without causing pain, in order to secure the greatest results.



TREATMENT C.—PHOTOGRAPHS 4 AND 5.

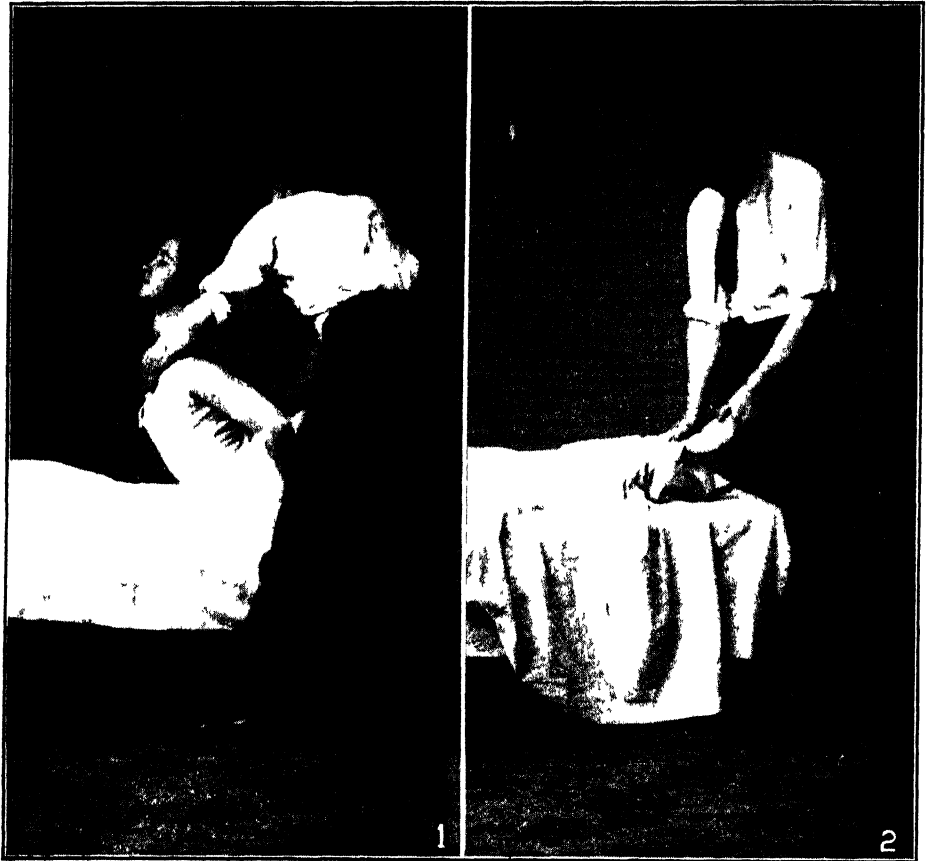
No. 4. Now request patient to bend as far forward as possible, and after he has bent as far as possible, press downward on the shoulders to materially increase the forward bend of the back. Repeat several times.

No. 5. Following the preceding movement, and starting with the patient's back bent far forward in this manner, grasp the shoulders and twist the upper part of the body first far to the right and then far to the left. Repeat several times. These movements powerfully affect the dorsal and lumbar regions of the spine.



TREATMENT D.—PHOTOGRAPH 1.

No. 1. With patient reclining face downward, place hot cloths about six inches in width along the entire length of the spine. Ordinary bath towels may be used, or a sheet can be folded in such a manner as to make a satisfactory hot spinal pack. These hot cloths should extend from the nape of the neck to the end of the sacral region in the lower part of the hips, as also illustrated in Treatment F. They should be applied to the spine as hot as the patient can possibly bear them; as a rule it is a good plan to wring them out of water as near to the boiling point as the patient can endure; and when the cloths are especially hot they can be put on for a brief moment and taken off three or four times; in this way the patient becomes inured to the unusual heat. Do not forget that these cloths must be as hot as the patient can bear them, otherwise they do not serve their purpose. Now with these hot cloths on the spine proceed to give the patient the movements described in **PHYS-CULTOPATHIC TREATMENT B**, or as nearly the same as possible.

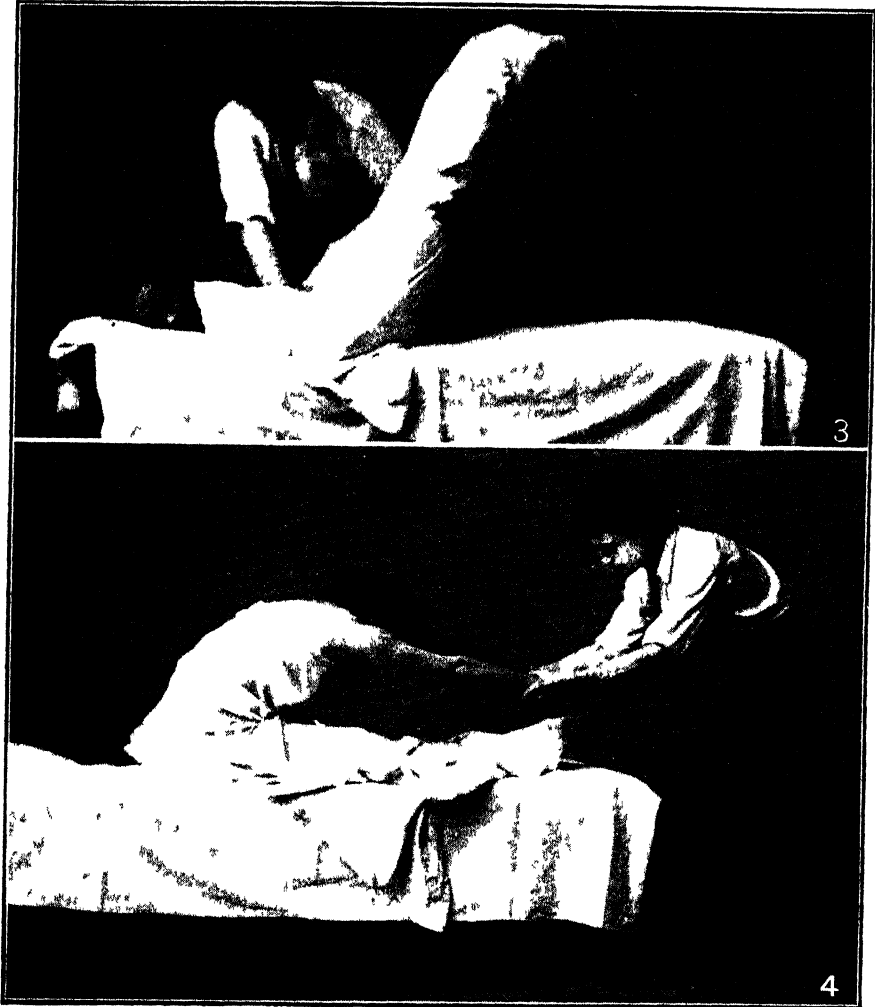


TREATMENT E.—PHOTOGRAPHS 1 AND 2.

This particular treatment can be given only to patients who are fairly strong, or when there is simply the appearance of weakness. If the patient possesses unusual vitality, a vigorous application of this treatment will often awaken the functional processes and materially hasten recovery. First give the patient the treatments that are indicated in *PHYSICULTOPATHIC TREATMENT A*, after which proceed with the following:

No. 1. While standing on the left side of the patient, who is reclining face downward, place the palm of the right hand on the small of the back, and the left forearm under the chest; now while pressing down with the right hand, raise the patient's chest and head with the left arm as high as you can, arching or bowing the back. The greater the bend of the back accomplished without pain, the better. Repeat the movement several times. This is an important movement for invigorating the dorsal region of the spine.

No. 2. Grasp the patient by the right foot and twist the leg far to the right and far to the left a number of times. Same treatment with other leg. For hip, knee and ankle joints.



TREATMENT E.—PHOTOGRAPHS 3 AND 4.

No. 3. Standing on the right side of patient, reclining face downward, place the right hand on the small of the back, and the left forearm under both legs, halfway between the knees and hips, now while pressing down on the small of the back with the right hand, raise both legs of patient as high as you can, as illustrated. Repeat several times. This affects both the dorsal and lumbar regions of the spine.

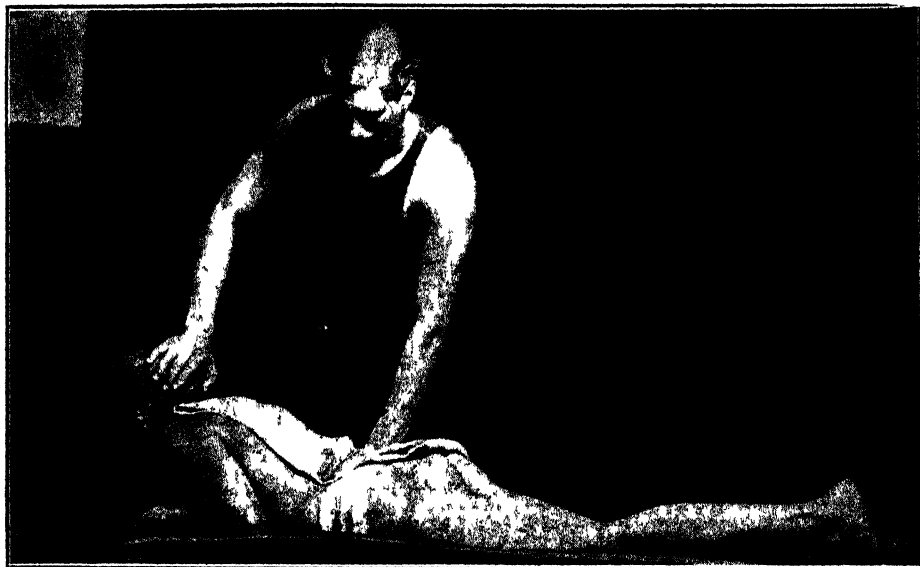
No. 4. With patient in sitting position and facing you, request him to bend forward as far as possible, then grasp the wrists of both hands and pull him as much farther forward as you can, without causing pain or strain, thus materially stretching the spine in the region of the small of the back. This is an exceedingly effective treatment. Repeat several times



TREATMENT F, No. 1.—Hold hands on the ankle and the small of the back of the patient as shown in illustration. Now have patient raise the chest off couch as far as possible, bending back as shown in the illustration. Return to former position and continue this exercise until there is a decided feeling of fatigue. Spread the open hand over the small of the back to insure the hot towel, applied as in Treatment D, coming into close contact with these muscles.



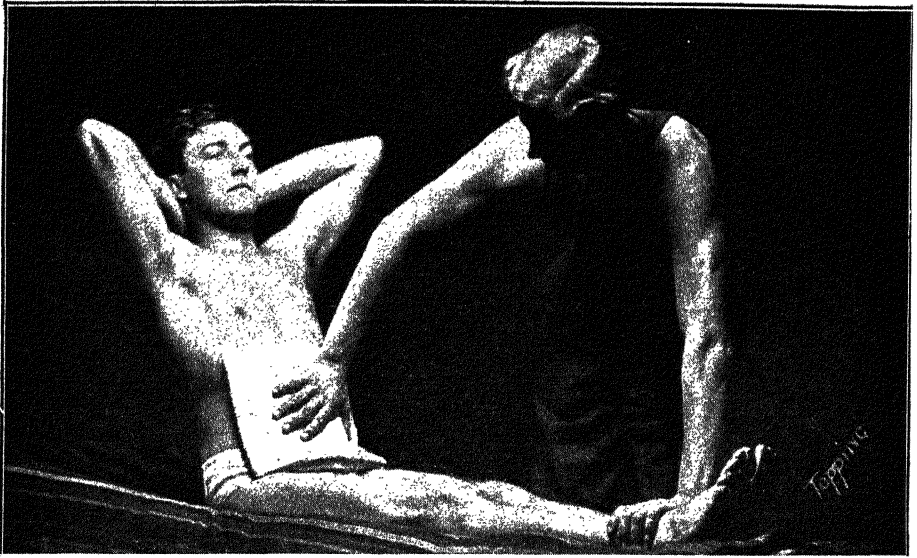
TREATMENT F, No. 2.—Have the patient place arms in position shown in illustration. Now allow arms to go slowly downward on a line with shoulders as far as possible, and then bring them back to their starting position. As the arms come upwards, the movement should be strongly resisted by the operator. Exercise should be continued until there is a decided feeling of fatigue. If patient's muscles are weak, little resistance is needed; if strong, increase the pressure.



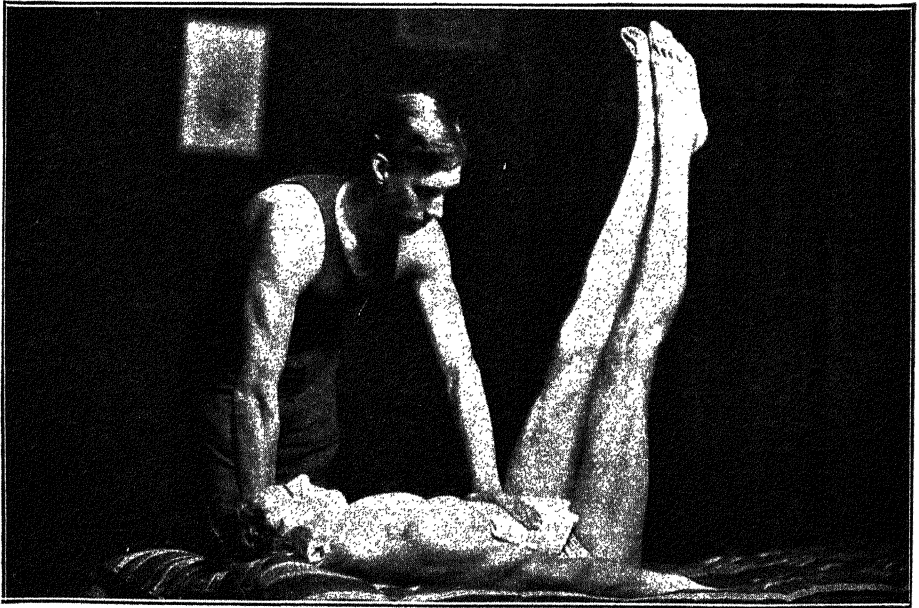
TREATMENT F, No. 3.—Place the open palm of the hand on the small of the back of the patient, and the other hand on the back of the head. Now instruct patient to bring head down as far as possible, then bring head backward, and as head comes upward, press vigorously against the movement.



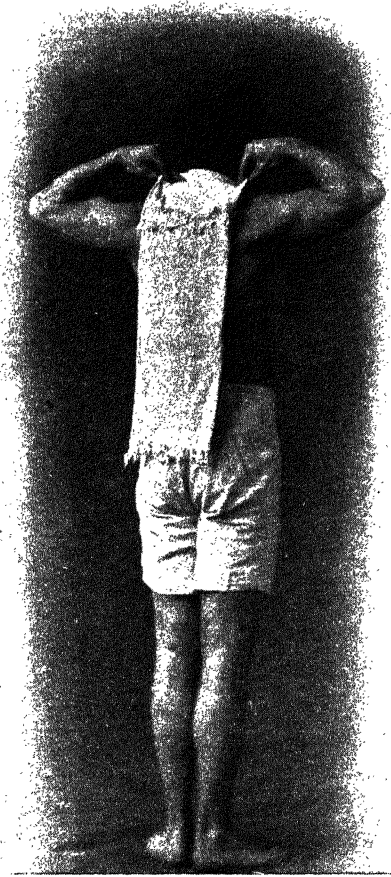
TREATMENT F, No. 4.—The above position shows the completion of the movement. Bring the arms upward from a hanging position, in the manner illustrated. Do not forget the necessity of changing the hot towel two or three times during these various movements and when finally removing towel, the back should be massaged slightly.



TREATMENT F, No. 5.—When the heated towel has been applied to the abdominal region for a short time, begin the exercise shown above. First recline on the back, then rise to a sitting position. If the exercise is too difficult with the hands behind the head, then the hands can rest on the legs. If too weak to take this exercise at all, the patient can take the operator's hands and be assisted slightly in the movement. Continue until slightly tired.

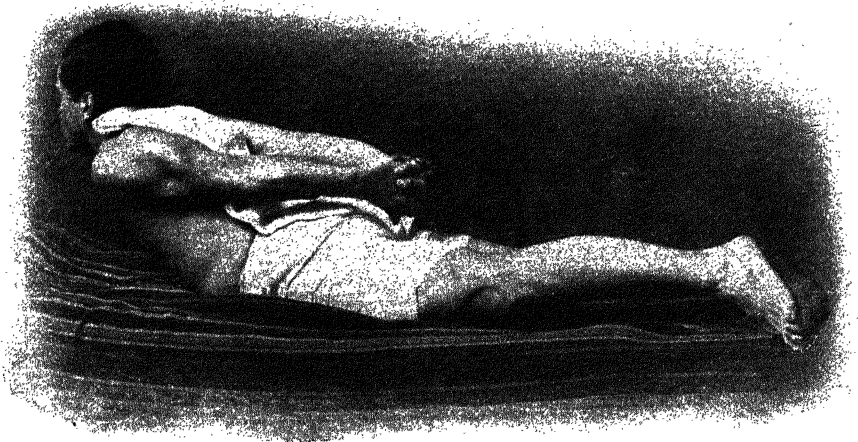


TREATMENT F, No. 6.—Lay the open palm on top of the hot cloth as illustrated. Instruct patient to raise both legs to a perpendicular position as shown above. Return legs to the couch and then continue the movement until there is a decided feeling of fatigue. The abdominal region can be in some cases massaged thoroughly after this treatment to advantage.



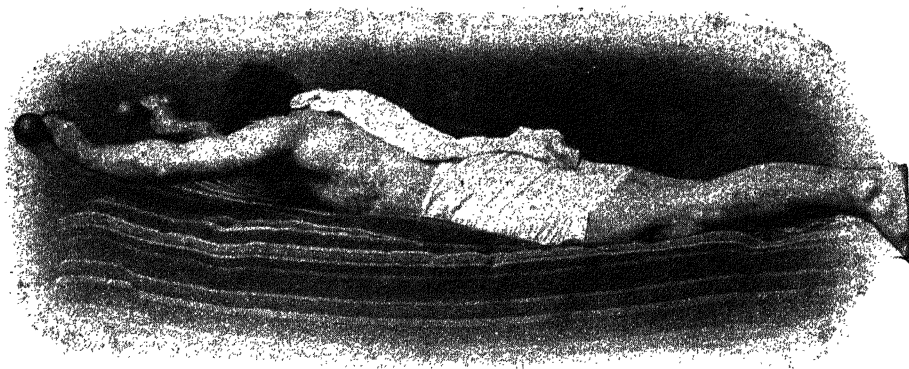
TREATMENT G, No. 1.—Wet a bath towel in very hot water. Wring it out until it is of a temperature that can be borne by the skin. Double it over until about the width shown in accompanying illustration, then throw it over the head and press it against the nape of the neck as shown. You are now ready to lie down on a couch or hard mattress for the various movements illustrated in this treatment.

TREATMENT G, No. 2. (See illustration below.)—Interlace fingers behind, as shown in illustration. Now raise chest as high as you can off the couch. Return to original position and repeat the movement until the muscles of the small of the back and hips feel fatigued.





TREATMENT G, No. 3.—With arms far out, on a line with the shoulders, clasp two dumb-bells (or weights of any kind), and raise hands as high as you can, as shown in illustration. Return to former position and repeat until muscles are thoroughly tired. It will be well to change the towel after this movement, making it a little hotter than the one previously applied.



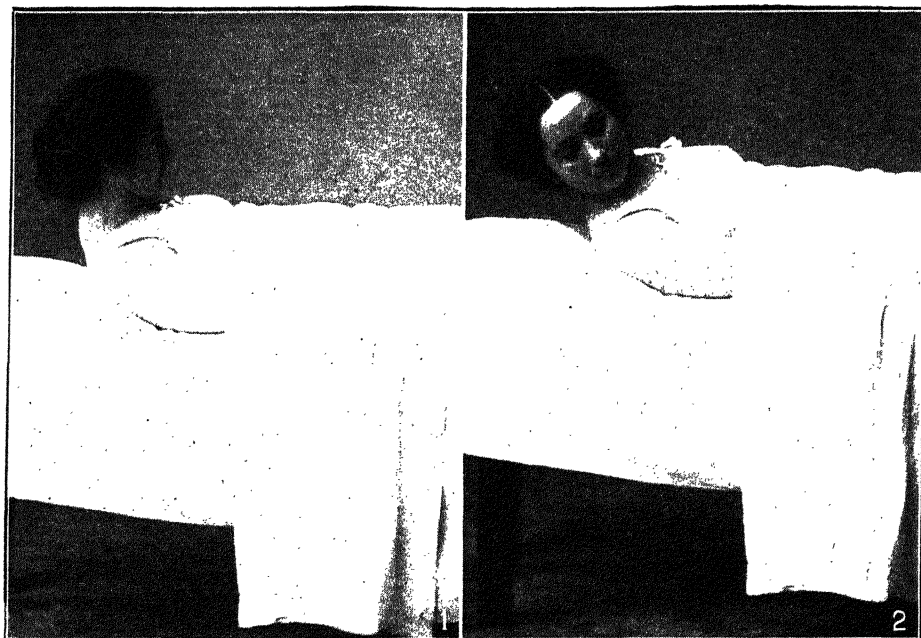
TREATMENT G, No. 4.—With arms straight out, directly in front, clasp weights or dumb-bells, and raise them as high as you can off the couch, as shown in illustration. Return to former position and repeat until tired. It will be noted that but little movement can be made in this exercise, though if you move the body near the edge of the bed so that the arms can go farther downward, the exercise is more complete and more satisfactory results will be secured.



TREATMENT G, No. 5.—Place hand on back of head and raise head as high as you can, using each hand alternately and always resisting movement with the hand employed. Return to former position and repeat until tired.



TREATMENT G, No. 6.—Secure another hot towel and place on the abdomen as illustrated. Recline quietly for a few moments, until the heat thoroughly permeates the muscles of the abdominal region. Then raise both legs as shown in the illustration. Return to former position and repeat movement until tired. Rest a while after this movement, breathing deeply and fully, then apply hotter towel, and keeping the feet on the floor, rise up to a sitting position. Repeat until tired. This completes treatment.

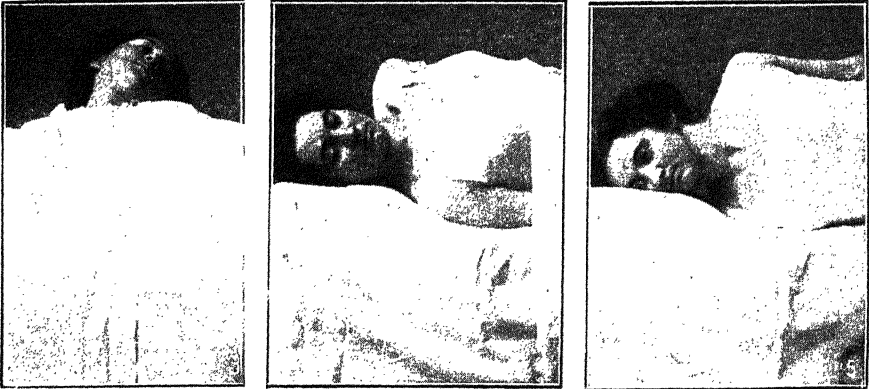


TREATMENT H.—PHOTOGRAPHS 1 AND 2.

These are movements to be taken by the patient without assistance, though of course they should not be attempted unless strong enough to move around in the bed without discomfort. In each exercise the tissues should be thoroughly stretched.

No. 1. While reclining on the back raise head from the bed as high as possible, or touching chin to the chest. Repeat until slightly tired.

No. 2. When the head is raised as far as possible, twist it far to the right and then far to the left. Repeat until slightly tired.

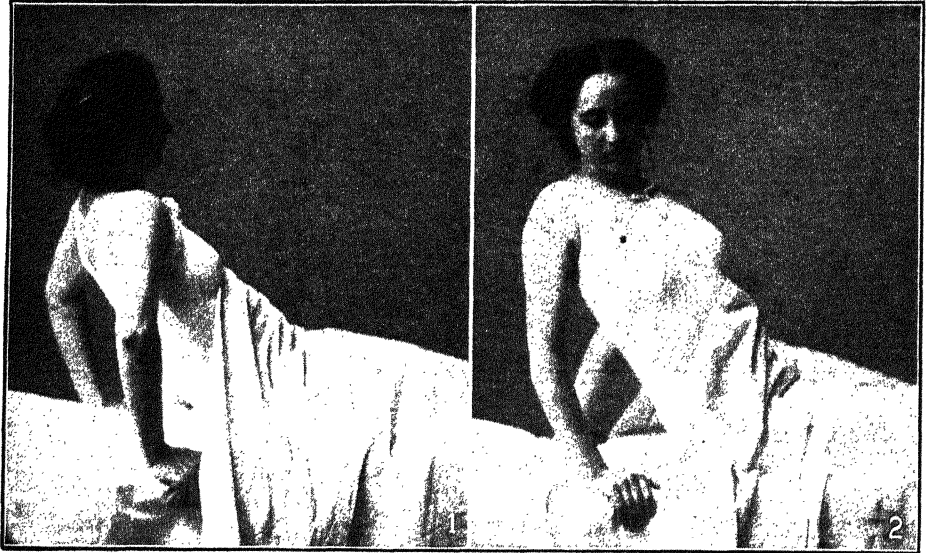


TREATMENT H.—PHOTOGRAPHS 3, 4 AND 5.

No. 3. Bring head without twisting the neck, far over until it touches right shoulder; then far over until it touches the left shoulder. Repeat several times.

No. 4. Raise right shoulder from the bed and endeavor to twist the upper part of body far to the right, the hips to remain stationary, or as nearly so as possible. Same movement in opposite direction. Repeat several times.

No. 5. Now roll or twist the hips or lower part of the body over toward the right until the hips rest, face downward, but with the shoulders still facing upward, and moved as little as possible. Return to former position on back and roll or twist hips similarly to the left. Repeat several times, making the exercise as energetic as possible without strain or causing discomfort.



TREATMENT I.—PHOTOGRAPHS 1 AND 2.

These movements can be taken by a patient who has acquired sufficient strength from preceding exercises to be able to add more vigorous movements.

No. 1. While partly supporting the body with the hands, rise to sitting position; return and repeat three or four times.

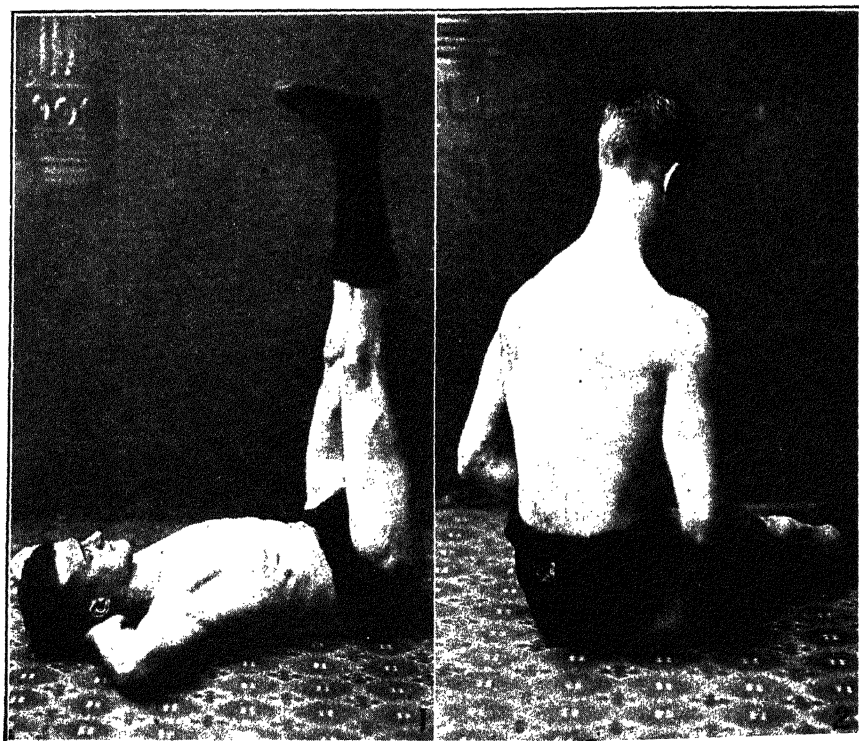
No. 2. Now while in sitting position, supporting the body slightly with the arms if desired, twist the body far to the right and far to the left. Repeat several times.



TREATMENT I.—PHOTOGRAPHS 3 AND 4.

No. 3. From sitting position bend body far forward, trying as nearly as possible to touch knees with chest. Return to upright sitting position and repeat several times.

No. 4. Bend the body far forward, and while in this position twist shoulders around as far as possible, first in one direction and then in the other. Repeat several times. All of these movements should be executed with vigor, though without strain or pain.



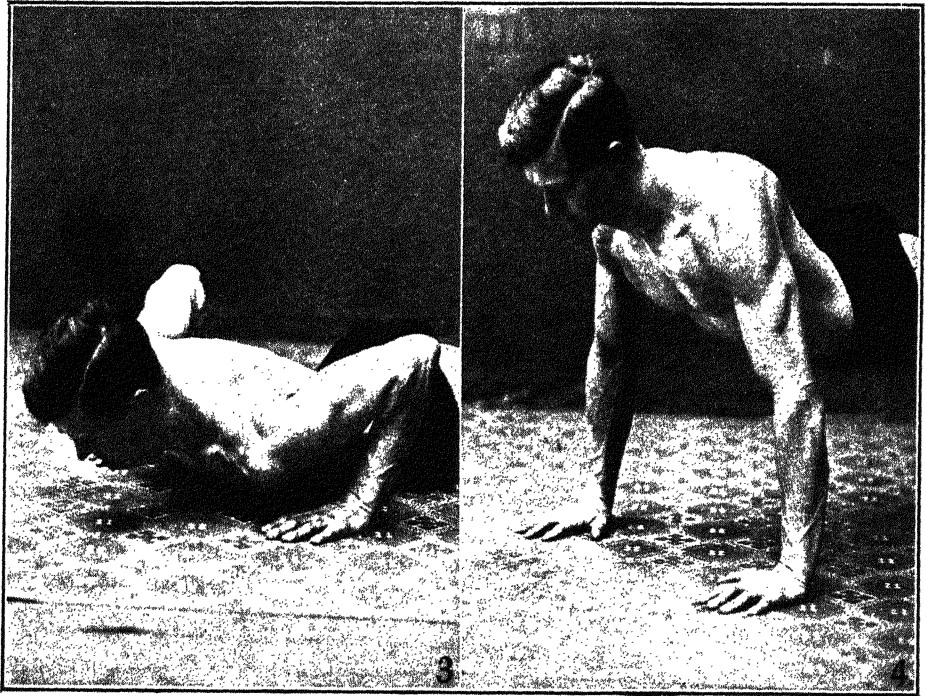
IMPORTANT NOTE.

The exercises on the following pages are to be performed in bed, in the same manner as the exercises previously illustrated. They have been depicted in the manner here shown in order that the parts of the body involved in all movements may appear plainly.

MOVEMENT J.—PHOTOGRAPHS NOS. 1 AND 2.

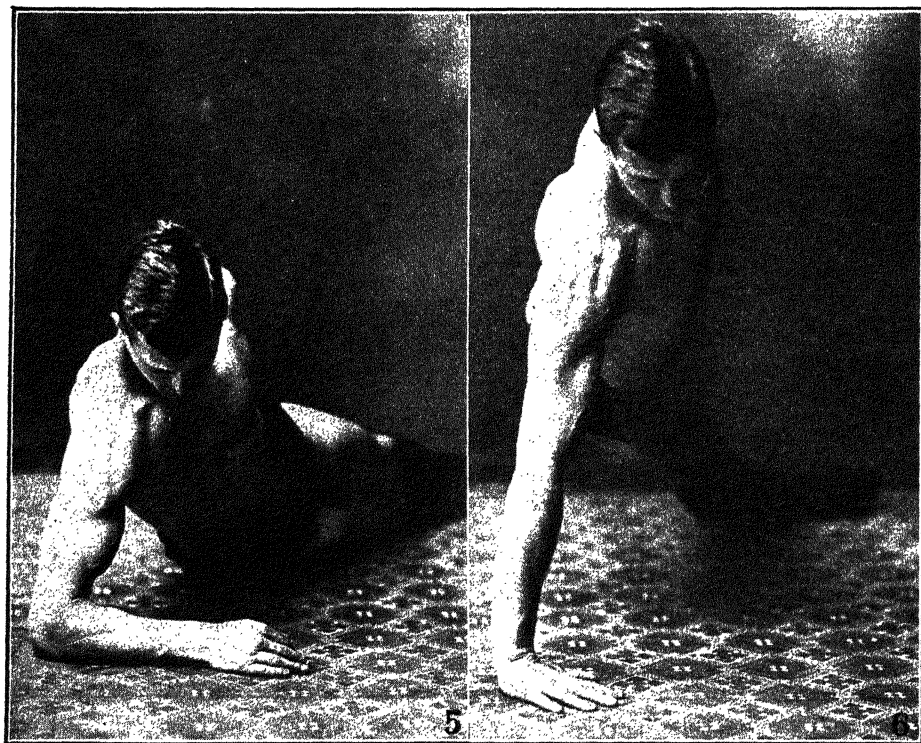
No. 1. Lying on the back, with hands clasped under the head, raise both legs up to a perpendicular, with knees straight. Lower and repeat, continuing until tired.

No. 2. Lying first flat on the back with hands resting on thighs, rise to the sitting position illustrated, and then lower the body. Often a similar movement is performed by using some weight to hold the feet down, but in this case it should be performed without anything of this kind. Repeat until tired.



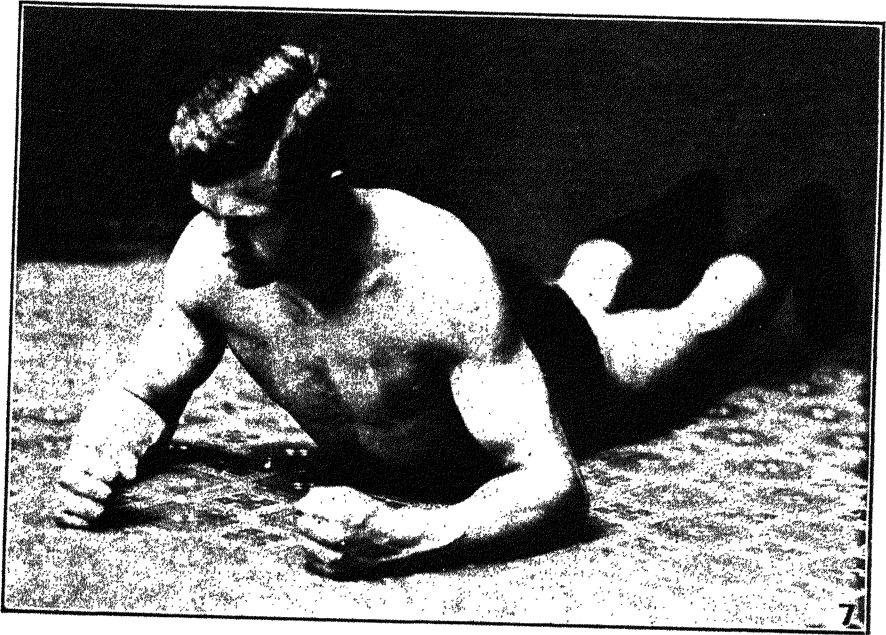
MOVEMENT J.—PHOTOGRAPHS NOS. 3 AND 4.

Lie prone on the chest and assume the position shown in the first illustration. Then straightening the arms, push upwards to the position shown in the second illustration. A similar exercise of a more vigorous character is performed by keeping the body rigid during the entire movement, but in this case there should be no effort to raise the hips or legs. Simply raise the trunk of the body. Repeat until arms tire.



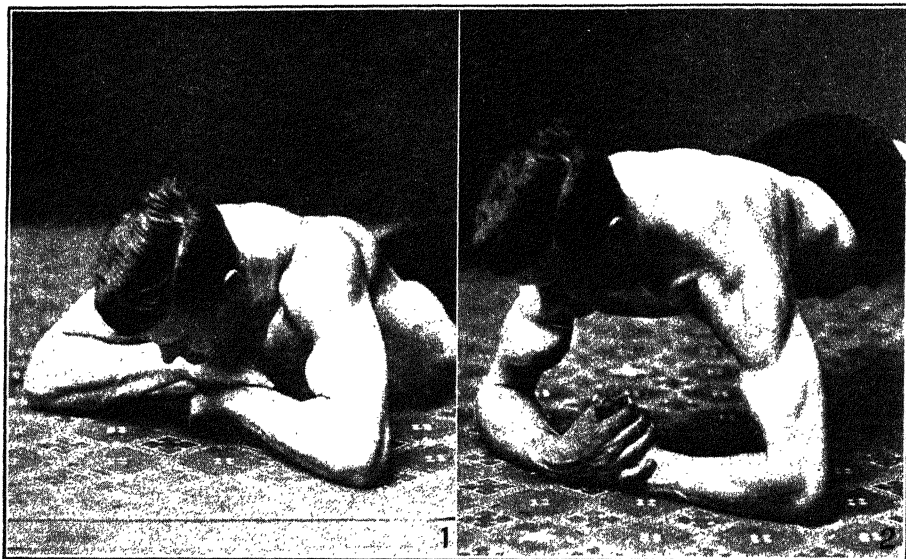
MOVEMENT J.—PHOTOGRAPHS NOS. 5 AND 6.

Lying on your right side, assume the position shown in the first illustration. Then by straightening the arm, push the body upwards to the position shown in the second illustration. Repeat until tired. Then lying on the left side, repeat the same movement with the left arm. In this as in the previous movement, no attempt need be made to raise the hips.



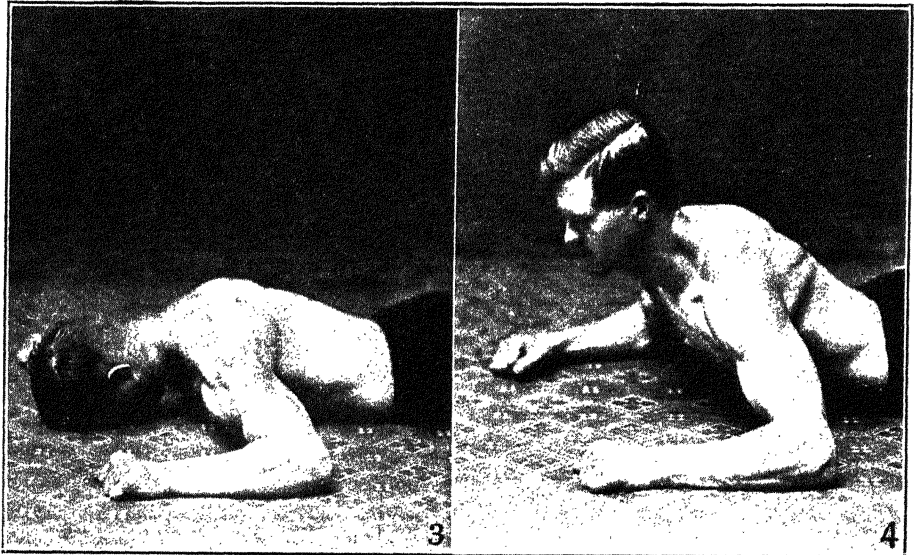
MOVEMENT J.—PHOTOGRAPH 7.

No. 7. First lie prone on the chest then assume the position illustrated herewith. Now lower the head and shoulders as much as possible, and then try to rise to the position shown, by pressing downward with the elbows. It is important that you do this with the elbows only, and avoid lifting yourself by pressing down with the hands or forearms. If possible, raise the forearms and hands, so that only the elbows will be used. After pressing upwards as far as you can in this way, relax and drop the head and shoulders. Repeat. continuing until tired.



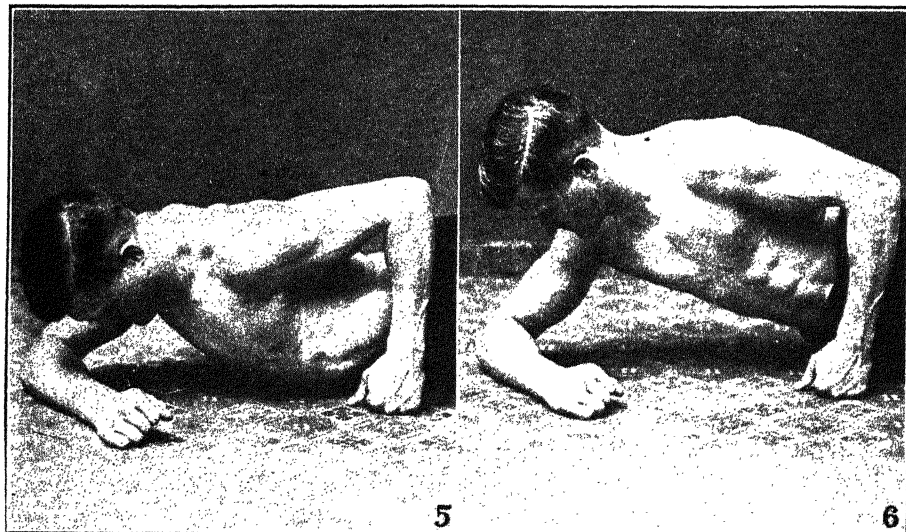
MOVEMENT K.—PHOTOGRAPHS 1 AND 2.

First lie prone upon the chest, folding the arms in the manner shown in the first illustration. Then by pressing down with the elbows, raise the chest and shoulders in the manner shown in the second illustration. Relax and repeat, continuing until tired. This is a splendid movement for the muscles of the upper chest.



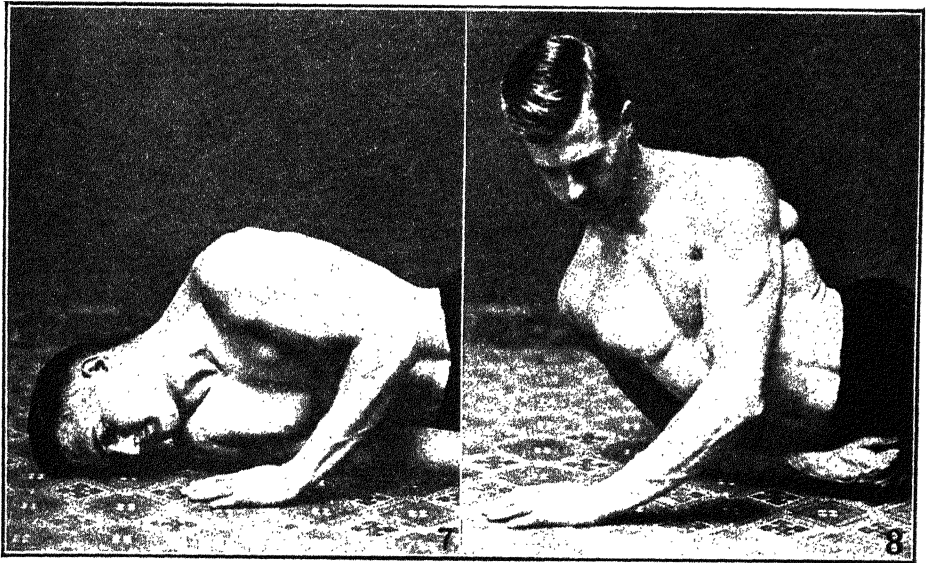
MOVEMENT K.—PHOTOGRAPHS 3 AND 4.

Assume the position shown in the first illustration, with the arms bent at right angles, and the elbows at each side on a line with the shoulders. Then raise the body to the position shown in the second illustration, pressing down with the elbows rather than with the hands. Relax and repeat until tired. This is even more effective than the preceding movement for the same purpose.



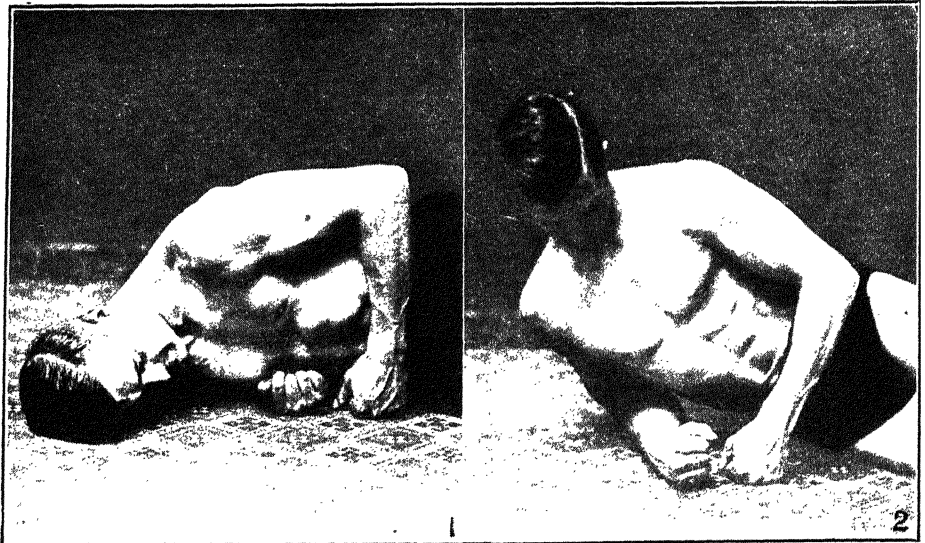
MOVEMENT K.—PHOTOGRAPHS 5 AND 6.

Reclining on one side in the manner shown in the first illustration, with the elbow resting on the pillow, raise the body to the position shown in the second illustration. If your strength is not sufficient to enable you to do this completely at first, you may give yourself slight assistance by means of the left hand, used in the manner indicated. Relax and repeat until tired. Then take the same movement on the right side.



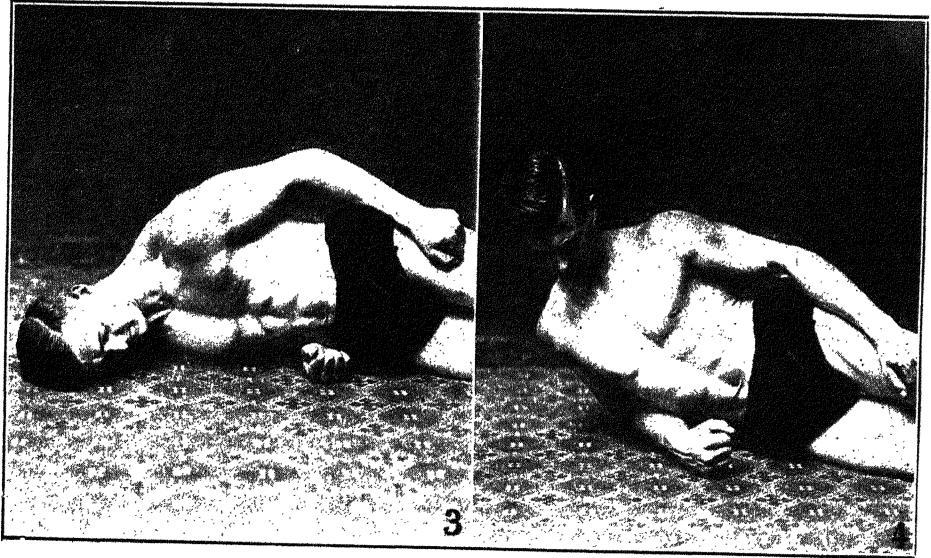
MOVEMENT K.—PHOTOGRAPHS 7 AND 8.

First lie on the right side in the manner illustrated, with the left hand on the bed near the right shoulder. Then pressing hard with the left arm, raise the body to the position shown in the second illustration. Relax and return to the first position and repeat until tired. This involves to some extent the muscles of the arm, but depends even more upon the pectoral muscles across the front of the upper chest. Same movement on the left side, using the right arm.



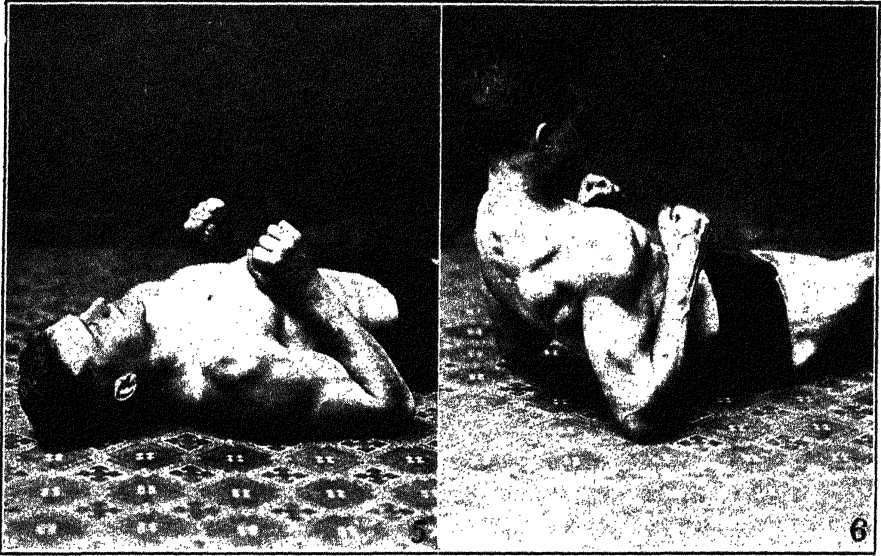
MOVEMENT L.—PHOTOGRAPHS 1 AND 2.

Recline first on the right side with the left arm across the abdomen and on the bed at the waist line. Then raise the body to the position shown in the second illustration by pushing downward with the left arm. After each effort relax a moment, then repeat, continuing until tired. Perform the same movement lying on the left side.



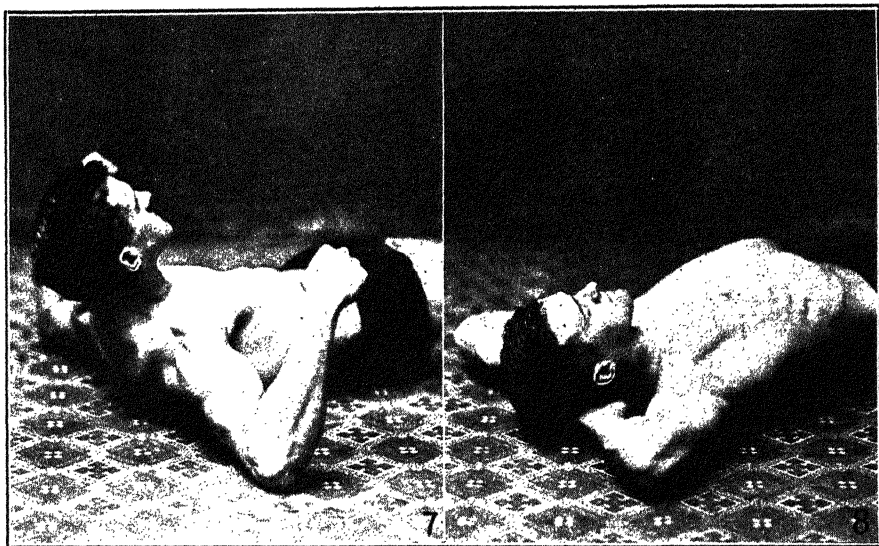
MOVEMENT L.—PHOTOGRAPHS 3 AND 4.

This is similar to the preceding movement, though it depends upon the action of the lateral deltoid muscles. Not only will it require more strength to execute, but it will develop this muscle very powerfully. The left arm should rest on the left side of the body so that the effort to raise the body will depend entirely upon the muscles of the right shoulder. It is of course possible to raise the body somewhat by contracting the muscles of the left side, but this should not be done. Relax after each effort and repeat until tired. Take the same movement on the left side, using the left arm.



MOVEMENT L.—PHOTOGRAPHS 5 AND 6.

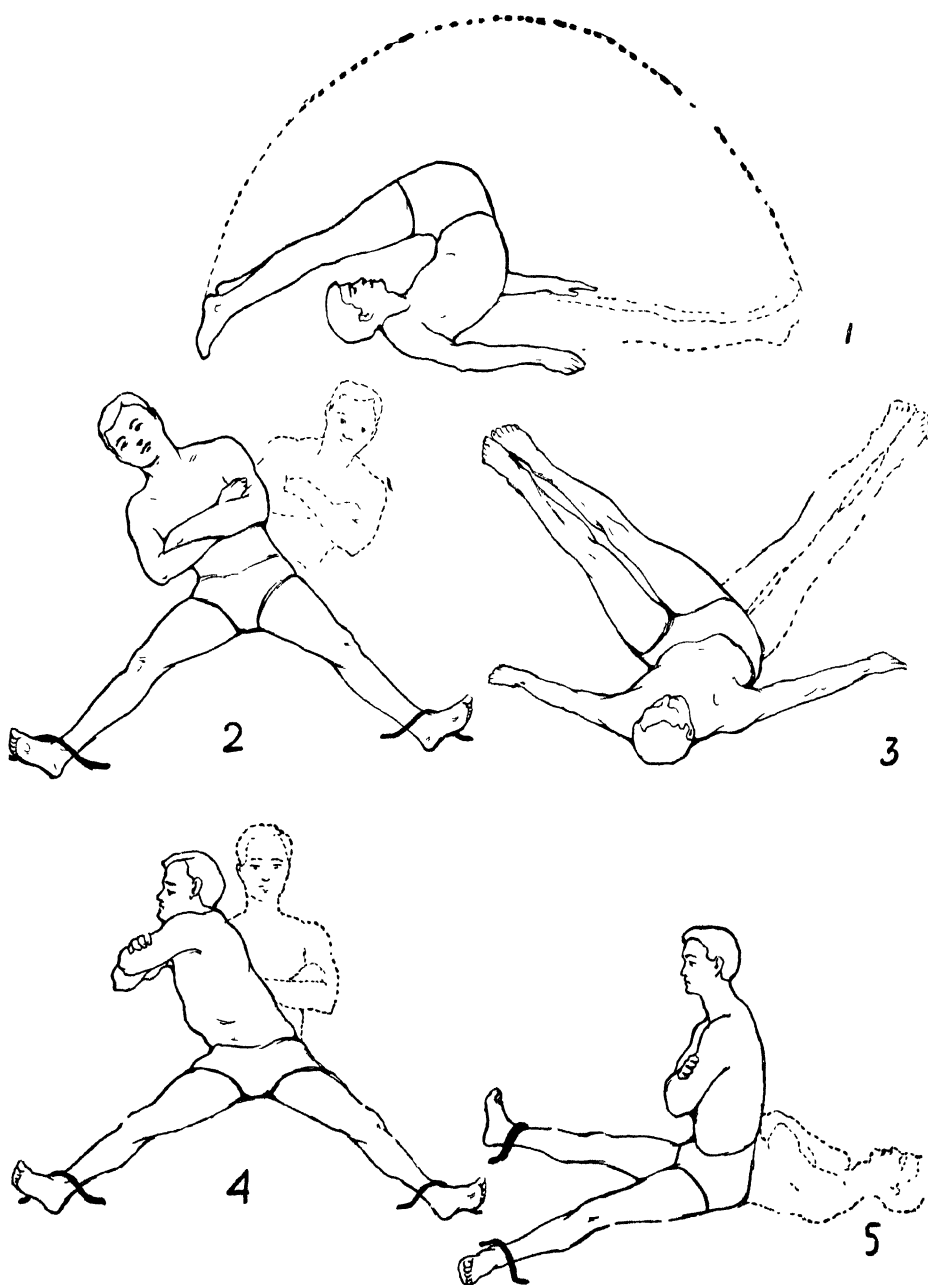
Recline flat on the back, with the elbows close to the sides, and the arms doubled in the manner shown in the first illustration. Then by pressing downward with the elbows, raise the head and shoulders to the position shown in the second illustration. You can raise the body in this way by the use of the muscles of the stomach and abdomen, but this should not be done in this case, the movement depending entirely upon the muscles back of the shoulders. Relax a moment after each effort, then repeat until tired.



MOVEMENT L.—PHOTOGRAPHS 7 AND 8.

No. 7. This is similar to the preceding movement, except that the elbows instead of being placed close to the sides, are extended sideways on a level with the shoulders. Raise the body by pressing downward with the elbows. Lower the body and repeat this movement until tired.

No. 8. This is similar to the preceding movement, except that the hands are clasped beneath the head and the position of the elbows is even further up than in the last movement. Endeavor to raise the shoulders and the head by pressing down with the elbows, repeating until tired. But a slight movement can be made in this exercise.



Full description of movements appears on opposite page.

MOVEMENTS M 1 TO M 5.

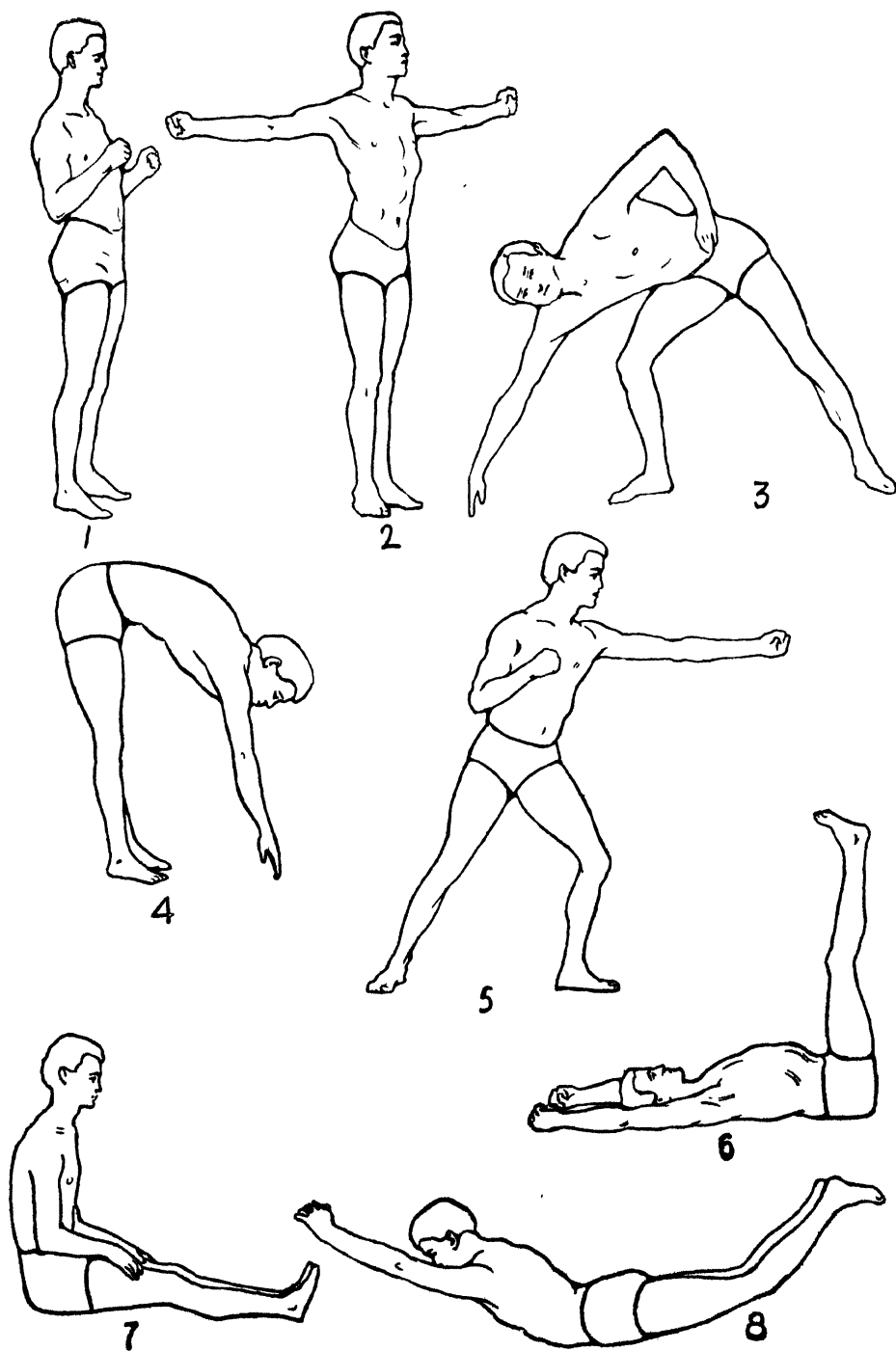
No. 1. Lie flat on the back with hands at sides. Now bring the legs upwards as far as you can and touch the floor at the back of the head if possible. If you cannot do the movement exactly as illustrated, bring the legs as far as you can. In each instance before bringing the legs upward inhale a deep breath, expanding the region of the abdomen as much as possible.

No. 2. This exercise requires two straps tightly fastened on the floor as illustrated in Fig. 2. Assume the position with the legs far apart as shown, and with folded arms bend the body far over to the right. Same movement far over to the left. When beginning draw in deep breath inhaling to the fullest extent in the abdominal region and after three or four movements take a similar deep inhalation.

No. 3. With arms out a little away from the sides, legs in a perpendicular position, bring the legs far over to the left then far over to the right. If you cannot maintain your balance with the hands as illustrated in Fig. 1, bring them out a little farther, then you will no doubt be able to make the movement a little more easily. At frequent intervals in this movement you should take deep full breaths.

No. 4. With feet in straps as illustrated in Fig. 2, inhale deep breaths, expanding the abdominal region, now going backward, twist the body over to the right as illustrated in Fig. 4, back to a sitting position, then bend back, twist the body to the left. Return to a sitting position. Repeat from right to left until slightly fatigued. In each instance, before bending back, inhale deep breaths, expanding the abdominal region.

No. 5. With feet in straps or under a heavy piece of furniture, from a sitting position go far backwards until reclining on back. On each occasion before going backwards inhale deep breath. Continue the movement until there is a decided feeling of fatigue.



Full description of movements appears on opposite page.

MOVEMENTS N 1 TO N 8.

No. 1. Assume an upright position. Hold elbows at sides and raise forearms up and down quickly forty to sixty times. Inhale deeply and fully, expanding in the region of the abdomen frequently during the movement. Repeat. Next flex the muscles of arms, imagine you are lifting a very heavy weight, and bring hands up and down very slowly. See Fig. 1.

No. 2. Assume an upright position with chest expanded and arms thrown straight out. See Fig. 2. Draw deep inspiration, frequently expanding in abdominal region all you can, during the movement. Now, keeping the elbows rigid, swing arms quick and strong, far backward and forward on a level with the shoulders as long as you can conveniently retain the breath. Repeat until tired.

No. 3. Stand erect with feet far apart. Now touch the floor far to the right, and then far to the left. See Fig. 3. Repeat movement from ten to twenty times.

No. 4. Stand with feet fixed firmly on floor, touching the floor with the hands. See Fig. 4. Keep knees rigid, raise hands as high as you can over head with elbows rigid, repeat from fifteen to twenty-five times. Inhale deeply every time you rise. For strengthening the back.

No. 5. Brace yourself as strongly as possible, then strike out hard and quick with right and left hands alternately, reaching as far as you can at each blow. Continue until tired.

No. 6. Stretch the arms far behind the head while reclining on the back, then raise both legs to a vertical position as shown in Fig. 6. Before making the effort to raise the legs be sure and draw in a deep inhalation, expanding the abdomen to the fullest extent.

No. 7. Recline flat on the back with the hands on the legs, now rise to a sitting position as shown in Fig. 7. If you find that the feet are inclined to rise as you try to raise the upper part of the body, place a pillow or something over them. Before rising in each instance draw in a deep, full inspiration, expanding as much as possible in the region of the abdomen. Continue the movement until you tire.

No. 8. Recline flat on the stomach with the arms far out in front as shown in Fig. 8; now after inhaling a deep inspiration with the arms rigid, raise legs and arms as high as you can off the floor. Maintain the position a few moments and try to raise them still higher. Relax and repeat, drawing in a deep inspiration before each effort. Continue until tired.

SPINAL ADJUSTMENT THROUGH MECHANICAL PHYSICULTOPATHY.—We do not altogether believe in the bone-breaking treatment advocated by some classes of drugless physicians. We do not believe in the orthodox forms of spinal adjustment only to the extent that this particular adjustment can be properly maintained by the strength of the muscles and ligaments. In any case such special adjustment would be of far greater value if combined with Mechanical Physcultopathy. For of what value is the adjustment of the spine, unless the muscles and ligaments which are used in holding the spine in position can be so strengthened as to hold it in position after it has been adjusted? Even when adjustment is required our policy is not the bone-breaking method (or what often seems to the patient to be such) that is often required in such adjustments, but to gradually strengthen all of the muscles and ligaments of the back and neck, which will then finally pull the spine into a straight and normal position. Under a policy of this kind the spinal processes are slowly but surely straightened, and when they are finally made straight, they are held there definitely and permanently, or at least as long as the muscles are maintained in a fair degree of strength. (See *Naprapathy*, *Osteopathy* and *Chiropractic*, this chapter.)

It is our strongest conviction that Mechanical Physcultopathy is the most effective of all methods for properly straightening, strengthening and stimulating the spine. And, if you have a straight, strong spine you can rest assured that your entire body is in fairly good condition. You will always find that a strong man has a strong spine. And we have learned through experience with many thousands of people that the various practices that may be employed for strengthening the spine will not only add materially to the vital vigor which is essential to remedy chronic and other ailments, but will help to bring about a degree of all-around physical strength that will ultimately place even a chronic invalid in the athletic class.

I have illustrated various exercises which may be prescribed for the purpose of increasing the general vigor and vitality of

the body. In ordinary cases all of the detailed movements described here as Mechanical Physcultopathy will not be necessary. That is to say, in the average case the more general movements will usually accomplish the purpose desired. I am, however, giving the details of the theories of Mechanical Physcultopathy so they can be used when required.

These treatments and exercises have been simplified as much as possible in order that our readers may make use of them at home without special expert instruction. Do not fear any ill effects from any of these movements, so long as you are careful not to continue them to a point where discomfort would indicate extreme fatigue. As soon as there is the slightest feeling of discomfort on the part of the patient from any movement or treatment, it should immediately be discontinued. If you will continually keep this in mind when giving these treatments and movements you can rest assured that there is little or no possible chance of your securing other than beneficial results.

NAPRAPATHY.—This system of spinal manipulation considers the cause of diseases and disorders to be an abnormal change of the connective tissues of the body, thereby interfering with the normal function of nerves, blood and lymph. Connective tissue naturally contracts after injury, as is readily observed in scars. The spinal ligaments are composed of this tissue, and all through life they are receiving injury, from strains, jars, shocks, severe twists of the body, or exposure; or from overwork, overfatigue, loss of sleep, straining emotions, etc.—all of which may produce sufficient injury, directly or indirectly, to result eventually in a shrinking of these connective tissues, which become hard and tense. These tissues are the only ones in the body that contract following inflammation, and they remain contracted unless special means are employed to remove the contraction.

The spinal column and bony framework are held together by strong ligaments. As the nerves pass out from the spinal column to their respective organs and structures they are enveloped in sheaths for greater protection. It is to these sheaths

that some of the fibres from the spinal ligaments are attached. Contraction of the ligaments puts unnatural tension upon the fibres attached to the nerve sheaths; this tension is transferred to the nerve fibres themselves, resulting in unnatural nerve functioning—thus producing symptoms of disease.

The Naprapathic physician locates deviations from normal in spinal resistance, soreness, and local temperature resulting from the connective tissue contraction; and by carefully planned and charted treatment endeavors, through the bony prominences of the spine as levers, to stretch these contracted tissues to relieve the nerves of abnormal tension. With this tension removed the nerve supply, circulation and nourishment of a part are restored and health recovered.

OSTEOPATHY.—Osteopathy is a form of drugless treatment which has become more or less popular in recent years. Such growing popularity might be expected from the fact that this method is infinitely superior to the old-fashioned drug treatment. In a word, it may be said that all of the various new methods of treatment have arisen largely because of the absolute failure of the medical profession to accomplish results. Let the doctors of the old schools cure their patients, and we would hear nothing of new systems of cure.

The term, "Osteopathy," according to its derivation, would seem to signify bone-disease. It might be inferred, also, that Osteopathic methods have to do with the treatment and manipulation of the bones. It is true that there is something of this in the practice of Osteopathy, but it is more largely devoted to matters having to do with nerve impingement. The advocates of this system of treatment hold that mechanical derangement is the cause of practically all disease, and that by means of mechanical adjustment, releasing pressure and restoring normal circulation and nerve function, all diseases can be overcome. Although recognizing the possibility of such derangement and the occasional necessity for mechanical adjustment in any part of the body, the Osteopath directs his attention chiefly to the spine, because of the greater frequency of subluxations of the various vertebræ and of the very pro-

nounced effect upon the various other parts of the body due to such subluxations. A rotated or misplaced vertebra frequently causes a compression of the spinal nerves which emerge from the spinal cord at that point and sometimes a compression of the spinal cord itself. Since the various organs and tissues of the body secure their vital impulses from the central nervous system, any such impingement of the spinal nerves cannot but affect the various organs and tissues unfavorably. By a series of treatments and manipulations the Osteopath seeks to adjust the spinal column in such a way as to permit of uninterrupted nerve impulses.

There is, therefore, much to commend in the practice of Osteopathy. If nothing more effective in the way of treatment is conveniently available, this system is to be advised. Certainly there is everything to be gained in the choice of the Osteopath as against the regular physician. And yet the methods which I am offering in these volumes will undoubtedly be found of far greater advantage in most cases because of their broader scope and application. Osteopathy may be advantageous in certain disorders that are plainly the result of subluxations of the spinal vertebræ, but there are an infinite number of ailments which are due to a variety of causes, and which can only be eradicated by attention to these causes. All kinds of habits and conditions of life contribute to these causes. Impure blood is the result of these various causes, and even the lesions of the spine which are credited with being the direct cause of disease are in most cases themselves the result of vicious habits, errors of diet, lack of activity and various unwholesome conditions.

Critics of Osteopathy have declared that its method is chiefly borrowed from a combination of Swedish movements and massage. This, however, should not make it any the less effective in those cases in which it has real value. In the matter of spinal adjustment, as I have said, Osteopathy is often of advantage, but the permanent results are somewhat doubtful even in this case, as the reader will see from my remarks upon the subject of *Spinal Adjustment Through Mechanical Phys-*

cultopathy, in another part of this chapter. The student who has mastered the science of Mechanical Physcultopathy will thoroughly understand how spinal adjustment may be accomplished through manipulating and strengthening all of the muscles and ligaments of the back. It is not alone in the advantage of stimulating the spine and energizing the entire system through my methods, but particularly in this matter of strengthening the ligaments and muscles of the back that Mechanical Physcultopathy stands supreme over all other methods of so-called spinal adjustment. By stretching and strengthening all of these tissues through my methods, the spine is straightened in a natural way, any subluxated vertebra is drawn back into line and in its normal position, and the entire backbone will retain its normal position and its vigor as long as these muscles and ligaments retain their strength. Spinal adjustment can be of little or no value so long as the muscles and ligaments are relaxed and incapable of maintaining the adjustment after it has been accomplished. In cases of long standing subluxation there is a degree of muscular tension which will prevent anything more than a temporary adjustment through the ordinary "bone-breaking" methods, as they have often been called. With my Mechanical Physcultopathic Treatment, however, the ligaments and muscles are considered as well as the vertebræ themselves, and the results are consequently decided and permanent. (See *Chiropractic, Naprapathy and Spinal Adjustment Through Mechanical Physcultopathy*, this chapter.)

SWEDISH MOVEMENTS.—What are known as Swedish Movements comprise a system of manual treatment invented and developed in Sweden, but now used to a considerable extent in progressive medical practice all over the world. The movements are passive in nature being executed by the aid of an attendant who takes hold of the limbs or other members of the body of the patient and moves them in various directions. Some of these are executed with the patient in a reclining position, some sitting and some standing. The treatment of the shoulder, for instance, while in a sitting position, would find

the operator standing at the side of the patient, taking his unresisting arm and moving it as far as it will go in various directions. Swedish movements are invariably given in connection with more or less massage, in which Swedish operators also excel. They may be recommended highly as a great improvement upon the old fashioned methods of medical treatment. They are good so far as they go, but they are not so comprehensive and thorough as the system of movements illustrated and described elsewhere in this chapter under the name of Mechanical Physcultopathy, and naturally fall far short of achieving the same results. Being absolutely passive, furthermore, there is a rather narrow limit to the degree of benefit to be derived from them.

Active exercises, in which the patient himself makes an effort and uses his muscles in the way that they were intended to be used by Nature, that is to say, voluntary movements involving the contraction of the muscles and more or less exertion against resistance, are infinitely better. If the patient is unable to perform voluntary movements in the way of exercise, then the attempt slightly to resist movements given by an attendant, will be of very great benefit. In any case, the active form of exercise is infinitely superior to that which is merely passive. In my system of Mechanical Physcultopathy, I have included both passive and active movements, the latter provided in some cases merely by the effort of the patient in resisting the same movements which are applied in a passive form. In case of great weakness, only passive movements are possible.

VACUUM OR SUCTION TREATMENT.—A form of vacuum or suction has been somewhat used in the treatment of disease, both in medical and other circles. This was originally known under the name of "Cupping," a partial vacuum being then produced by first heating the cup and the air in it, applying quickly and then allowing it to cool, producing a measure of suction. Later special cups with rubber rims were manufactured for the purpose, the air being removed by a pneumatic pump after application. The real physiological purpose of

the suction produced was to accelerate the local circulation, the blood naturally being drawn to the part in profuse quantities. If carried too far, bleeding will result, the blood being drawn through the skin.

This suction treatment may be of material advantage in some cases, but as a general thing the circulation can be controlled so much more satisfactorily by hydrotherapeutic measures and other forms of treatment that this is quite superfluous. Hot fomentations or alternate applications of hot and cold wet cloths will have a far better effect in every way, while through Mechanical Physcultopathy one can accomplish results which cannot be gained either through this vacuum treatment or any other means.

VIBRATION.—Vibration is a form of mechanical treatment which is often of value in connection with other methods. Its value lies in the fact that it increases the circulation in the part treated. More explicitly, vibration is a form of percussion, involving a rapid alternation of compression and relaxation of the tissues. The compression forces out the stagnant, venous blood, the momentary relaxation allows the fresh arterial blood to enter the tissues.

In some curative institutes, great machines are employed to vibrate various parts of the body. Small mechanical vibrators are also to be purchased which may be operated by the hand of the patient upon his own person. But manual vibration or percussion is probably the best of all, and is used in connection with some of the Mechanical Physcultopathic Treatments illustrated elsewhere in this chapter. In this the arm of the vibrator is vibrated either from side to side or up and down, not unlike the familiar movement of the telegraph operator in sending a message, the vibration being transmitted through the fingers which are placed upon the spot to be treated.

It may be said that no form of vibration can be so effective as exercises of the various parts of the body which depend upon the voluntary effort of the individual concerned. In the treatment of the sick, however, and in connection with some Mechanical Physcultopathic movements, vibration is of decided value.

CHAPTER IV.

FIRST AID IN EMERGENCIES AND ACCIDENTS.

THE application of physical culture methods in most cases of accidents and emergencies is scarcely less important than in the preservation of health or the elimination of ordinary disease. It is very commonly thought that first aid involves to a certain degree the use of chemical stimulants and drugs, but in practically all cases the same or far better results can be accomplished by the rational use of hydrotherapic and other natural measures. It is true that serious cases often require expert professional assistance, sometimes surgery, as in wounds and broken bones, and wherever possible to secure competent osteopathic practitioners, they may be recommended. But it is always desirable, sometimes imperative, that immediate first aid measures be adopted until more expert help can be obtained, and it is the object of this chapter to indicate simply and clearly just what is to be done in various emergencies. Often it means life or death, and everyone should deem it an essential part of his general education to know "First Aid" as thoroughly as possible. In some cases the measures suggested in the following pages will prove to be practically all that is required. In most cases also, the physical culture method will be found infinitely more effective, as well as safer, than most of the old-fashioned and drugging treatments applied in emergencies.

There is another aspect of the relation between physical culture and accidents which might be mentioned here, namely, the influence of the former as a means of increasing the resisting power of the body, not only preventing any susceptibility to disease, but enabling one to recover more speedily from accidental injuries which he may suffer. Sometimes a commonplace accident will develop serious consequences because of one's poor physical condition, while in another case a truly serious injury will occasion no more than the minimum of

inconvenience because of the vigor and vitality of the victim. Again, a condition of normal and vigorous health will in some cases prevent accidents, for it is well known that many of the mishaps of everyday life are due wholly or partly to the lack of alertness of the individual, perhaps to his lack of physical activity, his feebleness or that partial mental stupor which goes with either fatigue or a general condition of debility. Those who are physically fit to meet the emergencies of life are not nearly so liable to preventable accidents. And in all cases, constitutional measures for building vitality, improving the circulation, promoting digestion, assimilation and elimination, will be invaluable as a means of furthering rapid mending after injury and convalescence generally.

It is the way of Nature, in all emergencies, to act in such a manner as to repair any damage inflicted as rapidly as possible. As in the cases of ordinary disease, it should be our purpose to assist Nature in this task. The use of water, both hot and cold, as a means of controlling the circulation, promoting elimination, relieving pain and as an invigorating tonic, plays such a large part in the practice of First Aid according to physical culture principles, that the student should not fail to study carefully Chapter II of this volume, on the subject of *Hydrotherapy*. The more thoroughly he understands the principles of hydrotherapy and their application, the better will he be able to offer help in all emergencies.

An alphabetical arrangement of subjects is followed in this chapter, for the sake of quick and ready reference.

ALCOHOLISM.—*Acute Alcoholism* calls for radical eliminative measures together with cold compresses about the head and back of the neck to relieve cerebral congestion. If conscious, an effort should be made to give emetics (one teaspoon mustard or common salt in a glass of water) so as to empty the stomach as completely as possible. When unconscious, lavage is recommended (see *Lavage*, page 1461), though this is not always convenient. The patient should drink hot water (in small amounts) frequently, but may have fresh cool water if craved after return to consciousness. Hot

rectal irrigation is recommended. Cold abdominal packs or bandages (see *Girdle*, page 1443) will be beneficial, as would also prolonged warm or neutral baths, though hot baths, vapor, hot air or electric light baths would be better. After this continuous cold douches or other hydropathic measures are of value.

Delirium Tremens is brought about when the kidneys fail in the performance of their function, in addition to the toxic effects of the alcohol. Drugs here are useless. There is nothing like prolonged hot baths, lasting for hours at a time, with a temperature of 105 to 110 degrees Fahrenheit the first half hour, which may then be gradually lowered to 98 degrees. Cold compresses (not ice-bags) to the head must be changed frequently. If the hot bath is impossible, then the *Hot Blanket Pack* (see page 1450) should be substituted, if necessary strapping the patient down in it. Full hot enemas should be given as frequently as possible, especially if patient will not drink water freely. The stomach should be emptied if possible. The hot baths should be given for several days, lasting hours at a time and followed by cold douche or affusions, with no food whatever until all danger is past and real hunger felt. Between baths a cold compress may be applied over the heart for short periods to improve cardiac action.

APOPLEXY.—(See also *Insensibility*.) In apoplexy the face is flushed, nearly purple, while the breathing is labored, with some snoring; the face looks twisted or drawn to one side; the pupils of the eyes are likely to be unequally dilated; and one leg and arm are immovable, the result of paralysis of the nerve centers controlling the affected side of the body. The head and shoulders should be slightly raised, cold compresses applied to the head, and hot applications to the stomach and the extremities. A full hot enema (115 degrees Fahrenheit) should be administered, but without attempting the position of elevated hips which is usually most satisfactory in giving enemas (see *Internal Baths*, page 1454). Moderately hot water should be given as soon as patient can swallow, but no stimulants.

ARTIFICIAL RESPIRATION.—See *Asphyxia*.

ASPHYXIA.—Asphyxia or suffocation is the condition which supervenes when respiration is totally interrupted, unconsciousness being the result of the lack of oxygen and the excess or accumulation of carbonic acid gas. It may be produced by external obstruction, as in smothering, or in hanging, internal obstruction, as in choking, immersion in water, as in drowning, or by the presence of poisonous gas, as illuminating gas or smoke.

There are three important things to do in case of asphyxia: first, get the victim out of the causative environment and into fresh air at once; second, restore breathing by artificial respiration, and, third, restore the warmth of the body and promote the normal circulation of the blood. After breathing has been restored proceed with the second object as when dealing with unconscious persons who have not ceased to breathe. (See insensibility, page 1670). When possible, restore warmth and promote the circulation at the same time that artificial respiration is being applied. If two or more are at hand, one may attend to respiration, another may rub the limbs vigorously, while a third may apply to the feet towels soaked in hot water and then thoroughly wrung out.

A persistent effort should always be made to revive an asphyxiated person, for he may sometimes respond only after several hours of continued treatment. There have been cases of recovery after suspended animation of four or five hours. The dashing of cold water upon the face will help, though slapping the chest and an occasional dash of cold water on the chest will aid still more; in a stubborn case hot applications over the heart, with alternate hot and cold to the spine. This latter may be applied when the prone position for artificial respiration is employed, the patient lying on his chest and the attendant operating upon his back.

Artificial Respiration may be accomplished by several different methods, though the simplest and perhaps one of the best is that administered in the prone position, known to many

as Prof. Schäfer's method. It has the advantage that the tongue cannot fall back and obstruct the air passage, and also that any fluids may escape without causing trouble. Patient is laid prone upon his chest, with one wrist or forearm placed under his forehead to slightly raise his nose and mouth clear from the ground. All clothing should be loosened. Place yourself athwart the patient in a kneeling position, over the thighs, and facing the head, or, if more convenient, at one side of the hips. Place the hands flat one on each side of the patient's back, over the lowest ribs, and then throw the weight of your body gradually forward upon your hands so as to produce a firm but not violent pressure upon his chest. By this means the air is driven out of the patient's lungs, and also the water, in case of drowning. Immediately then raise and gradually swing back your own body so as to remove the pressure, in order that air may be drawn into the patient's lungs. Repeat and continue, always keeping the hands in position. (See illustrations, pages 967 and 968, Vol. II.)

In artificial respiration the number of movements per minute should be about the same as the normal rate of breathing, which is about fifteen breaths to the minute in adult life and a little more than this in childhood. With adults, therefore, each complete movement in artificial respiration should consume about four seconds, including both the expiration and relaxation of pressure, while in children it should be about three seconds, or twenty to the minute.

The more common methods are those which are practiced with the patient in the supine position, sometimes with a roll of clothing under the lower back to make it more effective. Inspiration is first accomplished by raising the chest through bringing the arms above and back of the head, and then expiration is produced by returning the arms to the front of the sides, doubled at the elbows, and with the elbows placed over the "floating ribs," pressing the elbows in upon them. This alternate compressing and releasing or raising of the chest should be continued at the rate of fifteen complete movements to the minute with adults and twenty for children. The supine

method has the disadvantage that mucus, froth or vomited matter has no opportunity to escape from the mouth, throat and air passages, but that, on the contrary, such matter will be most likely to act as an obstruction. In the case of drowning this objection is still more forcible, though in the latter case it is always the rule to first lay the victim upon his face, forehead on wrist, with a roll under his stomach, and thus to manipulate the body until the lungs are largely relieved of the water they contain and the mouth and throat emptied. In all cases it is usually best to turn the patient upon his face, in this position, so as to empty the mouth and throat of all obstructive matter and maintain a free entrance of air into the windpipe. Another objection to the supine method is the tendency of the tongue to fall back and obstruct the passage. The tongue, therefore, should either be held forward by an additional attendant, taking hold with a handkerchief between thumb and finger, or if one is unassisted, it should be drawn out and fastened to the chin with a rubber band or a piece of string. It will therefore be seen that the prone position has a decided advantage, though the movement of the supine position is very effective and most easily learned or applied.

Drowning calls for great care in draining the lungs of water the very first thing, before starting artificial respiration. There should not be a moment's delay. For detailed particulars on this point, however, the reader is referred to the instructions on treatment of the drowned in connection with the instructions on *Swimming*, in Vol. II of this work.

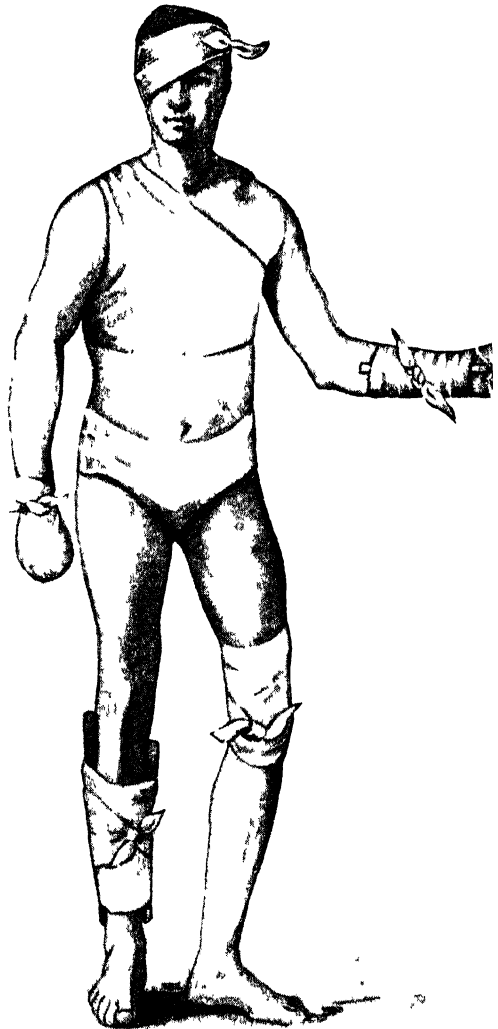
Asphyxiation by Gas or Smoke requires immediate application of artificial respiration. If it is necessary to take another out of a room full of smoke a handkerchief soaking wet should be held over the mouth and nostrils. If some one has been asphyxiated by illuminating gas, the odor can be detected immediately. Do not try to breathe upon going into the room, and above all things do not strike a match for light if it is dark. Take three or four deep breaths of fresh air, exhaling deeply each time, and then with a full breath held in tightly, enter the room and open the windows. Thrusting

the head far out of a window you can get another breath of air with which you may turn off any open gas jets or search for them. When necessary go to the window for another breath. Almost anyone can hold the breath a half minute at a time, which will permit of doing whatever is necessary.

Having attended to these matters, so that the air in the room will clear in a very little time, the asphyxiated one can be removed with greater convenience. If one is strong, however, he will doubtless be able to go in and carry out the victim at once, all with one breath. (See description of *Carrying an Unconscious or Injured Person*, in this chapter.)

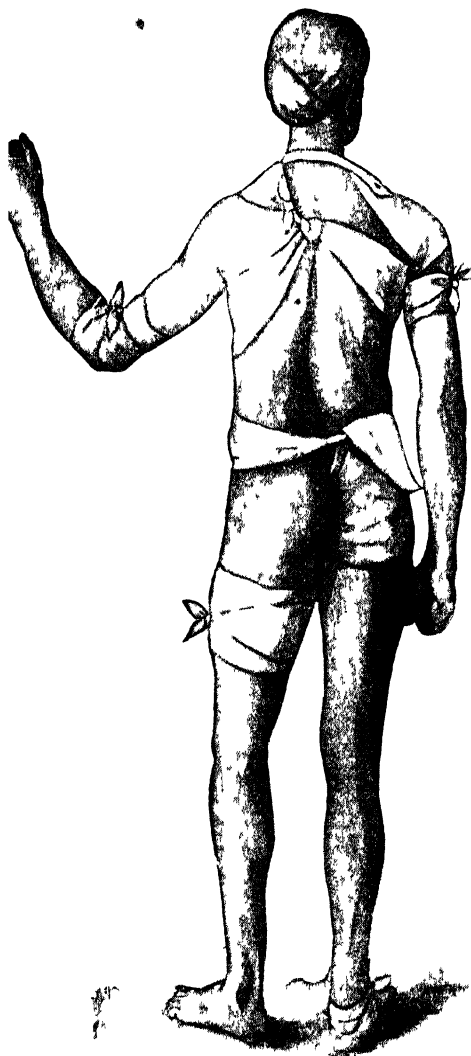
BANDAGING.—In the bandaging of wounds it is necessary to have the bandage sufficiently snug to accomplish its purpose, but great care should be taken to avoid having it too tight, lest subsequent swelling shall cause constriction.

Every one is more or less familiar with the roller bandage and its application. In emergencies, however, the triangular bandage is more available, for it can be made instantly from any square piece of cloth by a diagonal fold. By various means of applications it may be made to fit all parts of the body



Front view of figure, illustrating the use of the simple triangular bandage to various parts of the body. This may be made in large or small sizes from a handkerchief to a sheet, by triangular folds, and is the most available in emergencies. In most cases it should be applied by placing the center of the two ends around at the same time and tying. Can be used for temporary splints.

and will usually answer all purposes until professional or surgical help is secured for attention and final adjustment of bandages. After being properly placed, it may be secured either by tied ends or by pinning with safety pins. A square piece of cloth may be made into a diagonal bandage by square folds.



Back view of figure showing use of the simple triangular bandage, applied to various parts. Note the tying of the three corners of the chest bandage back of the shoulders. In applying to the ankle, the elbow or any similar "L" shaped joint or structure, the center should be placed over the outside angle, then folded around with both ends and finally tying over the instep, in the case of the ankle, or the inside bend in the case of the elbow. Safety pins may often be used with great advantage in making fastenings.

It is always a good plan to have a few bandages on hand in every household, in readiness for emergencies. Any linen or calico sheeting will serve. Bandages may be made by tearing old sheets in strips of various widths from one inch to three or four inches. They should be washed and boiled, ironed and rolled up ready for use, so placed that they will be free from dust. Sometimes the roller bandage may best be rolled up from one end and applied by unrolling from one end, called a *single-roller*, and in other cases it is more effective to roll up from both ends, called a *double-roller*, in which case one may start with the center, in its application, unrolling toward each end, and crossing the bandage on each side of the limb or body. Sometimes it may be made to fit uneven surfaces by *reversing*, that is to say, by a half-twist, or in other words, a crossing of the two edges. A *circular* bandage is one ap-

plied flat, round and round the same part. A *simple spiral* bandage is one applied flat, that is to say, without the reverses or twists alluded to, but only partly over-lapping, and running up or down a limb, as from the wrist to the elbow. A *reverse spiral* is a spiral in which the bandage is reversed upon itself with the twists just mentioned, so that it will lie smoothly. A bandage should never be reversed upon a bony prominence or ridge, and should never be applied wet, for in drying it will shrink and thus constrict the part.

In many parts, as for instance the shoulder, groin, foot or hand, a *figure eight* bandage or so-called *spica* will be necessary. In this the bandage is wound alternately around the two sections, crossing somewhat like the lines of a figure eight.

In the case of the thumb, for instance, or any "L" shaped part, the bandage may pass first around the thumb, then around the wrist, around the thumb again, the wrist again, and so on.

The student should take up these various forms of bandages and do a little practicing upon the various parts of the body, so that he may have no difficulty in case of an emergency. Good bandaging is something of a "knack," and when one gets the knack of making them fit, it is a very simple matter, just as is the trick of wrapping up all kinds of packages in paper, using such folds as will produce a perfect fit and conformity of the wrapping.

BITES.—See *SNAKE BITES*.

BLEEDING.—See *WOUNDS*; also *HEMORRHAGE*.

BRUISES.—See *CONTUSIONS*.

BUMPS.—See *CONTUSIONS*.

BURNS AND SCALDS.—If clothing is on fire, one should not run wildly about, for the air current will increase the flame. There is only one thing to do, namely, to lie down and roll over, trying to smother the fire in that way, using rugs or any clothing that may be within reach to wrap around and help

smother the blaze. It is also a mistake to run to secure water, for it would be better to lie down and roll to the source of the water. Erect, the fire spreads much faster through the clothing and catches the hair, while there is grave danger of inhaling the smoke, gas or the flame itself. If some one else is the victim, do not hesitate to throw him or her down, rolling him over and wrapping with your own coat or anything at hand to smother the flames. If some one else can bring water, so much the better. If not, wet the clothing as soon as possible after smothering the flame for there may still be smouldering fire or cinders of the clothing eating into the flesh.

In removing the clothing everything should be cut loose. Do not try to save any garment by taking it off the usual way. If any part stick to the flesh, do not pull it loose and do not burst any blisters.

Remember that it is not the severity of the burn of any local part, but the large proportion of the surface of the body which is affected that makes it dangerous and which may bring on fatal consequences. It is only another evidence of the importance of the functions of the skin in maintaining life and health.

In the ordinary household there is nothing more satisfactory than bicarbonate of soda (baking soda) mixed with water to make a moist paste and applied directly. This is especially satisfactory in the case of small burns, and applies just as well in the case of scalding.

In many cases of severe scalds or burns the greatest relief may be secured by immersing the burned parts in water of the temperature of the body, and in cases where a large surface is affected the full neutral bath (95 degrees to 98 degrees F.) is the best possible treatment. Perhaps some support in the way of a submerged hammock can be arranged, or a series of supporting straps under the water which do not come in contact with burned parts can be provided to make this bath perfectly comfortable for a prolonged time. In severe

cases the body or at least the burned parts may be kept continuously immersed in water at a temperature as low as 100 degrees, for days or weeks, or until the burned surface is healed. This continuous immersion treatment is endorsed by the best authorities. It is understood that the water must be previously boiled, and changed at least twice a day.

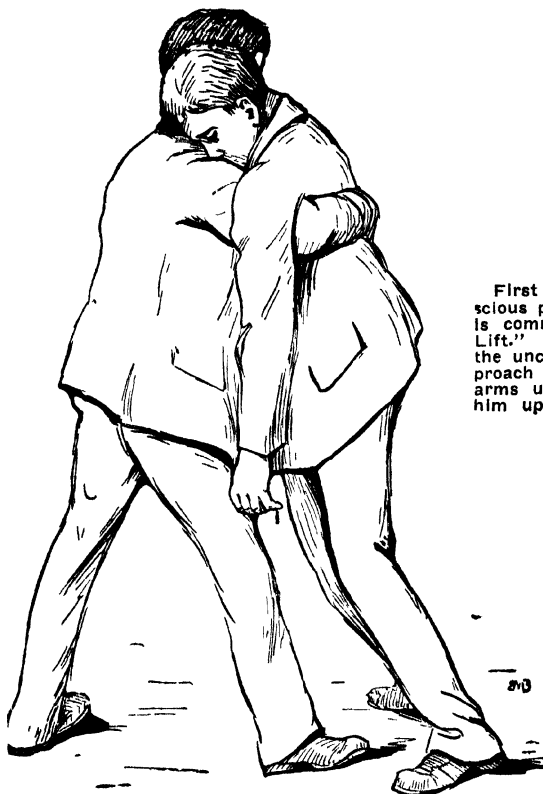
The same treatment will answer in severe cases of *sunburn*, though for ordinary cases of sunburn the simple application of cold wet cloths will be quite satisfactory, sprinkling them with more cold water as they begin to get dry and warm, and occasionally changing them.

The element of *shock* in severe burning is a serious matter, and the shock to the nervous system is usually in proportion to the area of the surface burned. In some cases the shock is the more serious difficulty (see *Shock*), and in that event should be treated first. However, since the warm or neutral bath above referred to is one of the most satisfactory forms of treatment for shock, and the best for burns, both purposes may be accomplished in the one treatment. Because of the shock, however, the drinking of hot water or hot weak lemonade (no stimulants) is highly advisable.

Lightning-stroke often kills, but when this is not the case it frequently causes severe burns which vary in extent and depth. Such burns should be treated the same as other burns. In most cases the worst effect of the lightning-stroke is the shock, which should be treated as suggested in my special discussion of the latter subject.

CARRYING AN UNCONSCIOUS PERSON.—Wherever possible, "First Aid" treatment should be applied to an injured or unconscious one before removal. When necessary to remove immediately, however, an improvised stretcher may be made from a loose door, a shutter or a broad plank, or by means of a blanket, sheet or sack cut open and fastened at the corners to two strong poles, oars or fork handles.

Where there is more than one to assist the injured one, the matter of conveyance is a simple matter. Where it devolves upon one person to carry another out of a place of danger,



First position, for carrying an unconscious person single handed. This method is commonly known as the "Fireman's Lift." Having first turned the body of the unconscious man face downward, approach him from the head, passing the arms under the armpits and then raise him up to the position illustrated here.

Second position, for carrying an unconscious person. Having raised the body to a standing position, shift the right shoulder and arm under the man's chest, bending far down, so that his body will fall and lie across your back in the manner illustrated here. With one hand grasp the wrist of the arm that hangs over your shoulder, and pass the other arm between his legs. You are now almost ready for the lift.



however, some definite instruction is necessary. One simple method is to carry the patient in an upright position, placing right shoulder under his armpit, right arm around his waist, his left arm back of your own neck and over your shoulders, taking hold of his left wrist with your left hand. In this way you can either help him walk or even carry him entirely.

If one is unconscious, and requires immediate removal, one cannot carry him in the arms in front, as he would a child, without great fatigue before going very far. The so-called "Pick-a-back" method will enable one to carry another on his back, and therefore for considerable distances. With the patient well up on the back, one of his arms should pass over attendant's shoulder, the latter supporting patient's armpit. Then with the patient riding astraddle, the bearer passes his arms under patient's knees from the outside and with one hand grasps the wrist of the latter from the other side. In this way he cannot slip off.

Every one should also know what is called "The Fireman's Lift," which provides a perfect hold, with the patient on the back and one hand free for any necessary climbing. With patient prone, approach him from the front, facing his head. Slip hands under his armpits and raise him to full length, facing you and leaning against you. Then bending down under him



Third Position, for carrying an unconscious person alone. Having arrived at the position shown in the second illustration, stand erect with the body on your shoulders. Then bring the man's arm across the chest so that you may grasp his wrist with the arm which passes between his legs. In this way he is supported and balanced perfectly, so that he may be carried a considerable distance with the least effort or strain, and one hand is left free for assistance in climbing.

so that he will lie with upper body across your back, you will find his near arm over or near your farther shoulder. Passing your near arm between his legs bring his near arm across the other shoulder, and then across and in front of your chest until you can seize the wrist with the hand passing between his legs. This leaves the other arm free. In the case of a woman, with the cumbersome skirt, the arm will have to pass around both legs back of the knees, then grasping the arm from across the opposite shoulder.

CHILLS.—See *Disease, Sudden Attacks of*.

CHOKING.—Choking as a result of foreign objects obstructing the throat calls for immediate treatment. The physical culturist is not likely to get fish-bones stuck in his throat, but he may suffer from other accidents of a similar nature. A vigorous slap between the shoulders will often dislodge the obstruction, but this is far more effective if the head is downward instead of upward. With small children it is a simple matter to let them hang head downward while patting on the shoulders, but it does not usually occur to the adult that this position is an advantage when choking. One may throw himself over a chair, stomach upon its edge, with head and throat hanging down, whereupon such a slap between the shoulders is much more effective.

One should look into the victim's throat to see if the object can be seen. Sometimes it may be reached with the fingers. Sometimes the handle of a tablespoon, concave bend downward, and kept well back as it is inserted, may be used, clawing forward with it. Thrusting a finger down the throat or giving a quick emetic to induce vomiting, will often loosen the obstruction.

CONTUSIONS.—Bumps and bruises are among the most common of all accidents, and especially so in the case of young children. Though the skin is not broken, there may be internal rupture of blood vessels which may be more or less serious according to the nature and extent of the injury. It is this internal hemorrhage which causes the rapid swelling and later the discoloration of the part. The so-called "black-eye" is a familiar ex-

ample of a contusion. Immediate impingement of the blood vessels of the part in order to stop the internal bleeding and pressure is the only instantaneous and effective treatment possible. This is best applied by means of some convex surface held firmly against the part. In the case of a small bump on the head, for instance, the bowl of a spoon would answer the purpose perfectly, while in the case of a larger bump a baseball, the bowl of a tablespoon or soup ladle would be better. There is a common notion that the blade of a knife or side of a ruler laid flat and smoothed across the bump is effective, but it only partly serves the purpose. Firm pressure should be continued for one or two minutes if there seems to be much swelling and very cold water should be secured as soon as possible. After the pressure has checked the internal hemorrhage, ice cold water will tend to still further contract the blood vessels and reduce the flow of blood. If a suitable piece of ice can be found so that it may be pressed against a folded towel and against the bruise, the treatment is ideal. The cold may be continued for half an hour, after which hot water, and later on massage should be employed. Saturating discolored spots with an acetic acid solution of the strength of weak vinegar will help to restore normal color.

CONVULSIONS.—As a first step in treating convulsions ice bags or other cold compresses should be applied to the head, with heat applied to the stomach and extremities. Usually this is best done by placing the feet in a hot foot bath, with fomentations to the stomach. The patient, in a recumbent position, should have head slightly raised. Hot water should be given to drink as soon as possible, and, if convenient, a hot enema (115 degrees F.) Better yet, if a bath tub is at hand, is a full hot bath (105 degrees to 115 degrees F.) for ten to twenty minutes, with an ice cold compress on the head and the back of the neck. On removal from the bath the cold applications to the head should continue, with a tepid sponging of the body and vigorous rubbing of same thereafter.

Convulsions of Infants sometimes occur as a result of fever or brain disease, and sometimes as a result of teething, indi-

gestion, constipation, worms, etc. The body first becomes rigid for a few moments, the skin wet with clammy perspiration and the pulse weak and rapid, followed by the convulsive movements and later a semi-comatose condition which finally passes into a natural sleep. The same hot bath should be employed as for ordinary convulsions, with cold compresses to the head. If the bath is not available the hot foot bath should be given, immersing ankles and calves. The hot enema should also be administered.

Uræmic Convulsions sometimes occur in the course of Bright's disease, and demand immediate measures for increasing the activity of the skin. If the full hot bath above referred to is not convenient, then the hot blanket pack (see *Hot Blanket Pack*, Chapter II) should be employed, with hot water bags at the feet and stomach, outside the blanket pack, if possible. Indeed, ordinary bottles filled with hot water may be packed all around the patient. If the hot bath is employed, lasting fifteen to thirty minutes, patient should be warmly wrapped in blankets upon being taken out and as soon as possible thereafter a full hot enema given to stimulate or restore renal function. If the condition is still serious, alternate hot and cold applications to spine should be given simultaneously with heat applied to feet and over heart.

CUTS.—See *Wounds*.

DELIRIUM TREMENS.—See *Alcoholism*.

DISEASE, SUDDEN ATTACKS OF.—Although detailed suggestions for the treatment of all known diseases are given in other sections of this work, yet it sometimes happens that disease comes on so quickly and mysteriously that the patient and those about him are likely to be confused and unable to determine the exact nature of the disease. The suggestions given here are of a kind that will be invaluable in practically all cases, purifying the blood, eliminating poisons and toxins and stimulating the circulation in a natural way. They will be equally valuable whether the disease is of a contagious nature or otherwise. Even if professional help is summoned, one should not lose any time in commencing treatment by

these methods, for in many serious diseases a difference of a few hours in beginning treatment will make all the difference in the world in the results.

First of all the alimentary canal should be cleansed as quickly and thoroughly as possible. Full warm enemas should be given (see *Internal Baths*, in Chapter II on *Hydrotherapy*) and if necessary repeated until the colon is well cleansed. In high fever cool or cold enemas. In bladder trouble, kidney trouble or retention of urine, hot enemas (115 degrees F.). If there is nausea and tendency to vomit, it should be encouraged, and emetics given, a teaspoon of salt or mustard in a glass of lukewarm water. After thus cleansing both stomach and bowels the patient should drink as much water as possible, hot or cold, according to his instinctive preference, hot in chills, and cool or cold in high fever. *Absolutely no attempt at feeding* should be made.

If there are severe pains in any part, hot applications should be made. In case of colic or cramps, hot fomentations should be applied to stomach and abdomen. There are some cases where cold compresses will answer better, and others in which alternate hot and cold should be employed. But usually for pain and inflammation the hot applications are indicated, also giving greatest relief.

In addition to the above, powerful eliminative measures should be adopted. In some cases a hot bath, hot air bath or vapor bath would be valuable, but as a measure which might be recommended in practically all cases the wet sheet pack is best of all. (See *Hydrotherapy*.) If the patient is weak and of poor recuperative power, and especially if suffering from rigorous chills, the hot blanket pack (see *Hydrotherapy*) would be better. Young children sometimes dread the cold sheet application, and in such cases the hot blanket pack would be preferable. On the other hand, if there is much fever, the cold wet sheet would be better, renewed every half hour, or occasionally cooled by a sponging or sprinkling of additional cold water.

If hands and feet are cold they should be made warm as

quickly as possible. If the head and face are hot, with the other extremities cold, then cold applications should be made to the head and hot to the feet. In many such cases a hot foot bath, including ankles and calves, with the rest of the body well wrapped in blankets, would be most effective, the patient meanwhile drinking freely of hot water or hot weak lemonade.

This simple scheme of treatment will be most effective in diseases of all kinds, and if commenced immediately upon the first signs of trouble will often be the means of averting a serious illness. It is almost miraculous what may be accomplished in even a few hours by these simple methods. It is of course understood that the room will be ventilated with wide open windows, so that the patient may have air to breathe that is practically the same and as pure as that out-of-doors.

DISLOCATIONS.—Dislocations should be left for expert assistance, for the inexperienced hand is liable to do far more harm than good in trying to readjust the parts. In emergencies, however, hot wet cloths may be laid over the part, or the joint submerged in hot water. All strain should be avoided. Sometimes the joint will return to place in response to a straight pull outward, but if this is not accomplished in one or two moderate pulls then the case had better be left to an osteopath or other expert. Every care should be taken to avoid any further strain upon the parts. Sometimes splints or supports should be applied. (See *Fractures* and *Bandaging*.)

DROWNING.—See *Asphyxia*; also under *Swimming*, in Volume II.

EPILEPTIC FITS.—This subject is taken up in detail in another part of this work, with symptoms and complete treatment. (See *Epilepsy*.) The student of First Aid, however, should know the first thing to do in the emergency of a fit, without taking the time for reading up. The distinguishing features are rigidity and unconsciousness, followed by convulsions and foaming at the mouth. Patient

should be placed in a safe place to prevent him from hurting himself, and a well-padded piece of wood or other suitable hard substance should be placed between his teeth to prevent him from biting his tongue. Do not try to restrain the twitchings and contortions. Following this procedure, be sure that the patient is in comfortable quarters and let him sleep undisturbed. Heat may be applied to the body if convenient. Do not try to give drinks during the convulsions, but hot water may be given after.

FAINTING.—[See also *Insensibility*.] In fainting the face becomes pallid, the skin cold. All clothing about the waist, chest and neck should be loosened and the patient placed in a flat recumbent position, with the head even slightly lower than the level of the body, if convenient. This may be done, with a bed or couch, by raising the foot of same a few inches. Cold water should be dashed upon the face, and, if convenient, also upon the upper chest, but not more than once or twice in the case of the latter. Slapping the chest, and especially the region over the heart, will help greatly, while in a stubborn or apparently serious case make hot applications over the heart. The recumbent position should be maintained until the circulation is again normal.

FRACTURES.—Fractures invariably require expert attention, and preferably at the hands of a surgeon, though great relief will be found in submerging the injured part in hot water in the meantime. One who is not expert in the handling of these matters should not try to adjust the break, though if one must go some distance it may be well to put a splint upon the part so as to avoid further strain while traveling. A well-padded shingle, ruler, board or almost anything convenient may be adapted for the purpose.

The injured part should be kept as quiet as possible, and if the attempt to immerse it in hot water would involve any strain, then it would be better to apply hot wet cloths, as hot as can be comfortably endured. Movements of the parts after a fracture is often likely to add far greater injury, and if there is any possibility of such movements being made, tem-

porary splints should be applied to prevent the fracture from becoming any worse until help arrives. Sometimes two or four splints will be necessary with an arm or leg, each smoothly padded. Splints and bandage should be ready before attempting to handle the part. Then grasp gently but firmly with both hands, one above the fracture, the other below, extend the limb and restore it to its natural position as far as possible, pulling apart slightly if necessary, but only slightly, place upon the splint or splints and tie firmly but not too tightly at each end. A handkerchief or other triangular bandage will answer perfectly in most cases. It is best to have two persons to apply splints, if possible. The splints may be padded with any soft material within reach. Use only clean material if there is any rupture of the skin.

The head, when injured, should not be neglected, even though the patient seems only stunned and apparently recovers. Subsequent collapse may show that the accident is serious. If unconscious, proceed as suggested under *Insensibility*, especially applying cold water to the head. If the pupils of the eyes are unequally dilated, there is probably injury to the brain, concussion or compression. Alcohol should not be given.

The clavicle or collar-bone is so near the surface and so readily felt that any fracture is easily discerned. Clavicle fractures are among the most common. If there is difficulty or delay in securing help the shoulder should be pushed back with one hand, the other hand placed upon the fracture to get it in place, put a round pad of the thickness of the arm under the armpit and then bandage the body, firmly, with the arm of that side fastened immovably to the side. The forearm should be raised across the chest, well up, in a sling.

Broken ribs require stopping all sorts of movements, with a bandage around the body to insure this end. This bandage should be six inches wide. Straps of adhesive plaster reaching halfway round the chest will also answer the purpose.

The upper arm will require four splints in case of fracture. A fracture at the *elbow* should be handled by placing a splint

upon the entire arm, keeping it straight. In placing splints upon the *lower arm*, the thumb should be held uppermost as when laying the palm flat against the chest. There is always swelling during the first two or three days, so that bandages must not be too tight.

A fracture of the *thigh* often gives trouble because of the spasms of the powerful muscles of the legs. A pillow should be used, with barrel staves or pieces of board to keep it straight. Sometimes it is well to place a bandage around the ankle, with a weight tied to this hanging over the foot of the bed or couch, thus pulling down and giving much relief. This weight may vary from fifty to one hundred pounds. The leg should be kept straight in a fracture of the knee-cap.

If the smaller or outside bone of the *lower leg* be broken, the larger bone will usually serve very well as a splint. Fracture of the larger bone will require splints. It is so close to the surface, and so easily felt, that the nature of the fracture is readily determined, and the parts more perfectly readjusted.

FREEZING OR FROST-BITE.—The important thing in cases of freezing or frost-bite is to have the tissues thaw out gradually, so that the blood may be admitted to the tissues very slowly and prevent gangrenous developments. Patient should NOT be brought into a warm room, but should be either kept out-of-doors or placed in a cold, well-ventilated room. Any changes to warmer temperatures thereafter should be made very gradually. The best treatment is rubbing the parts with snow or ice cold water. In a severe case artificial respiration may be required. If limbs are affected, it is well to keep them elevated to lessen pain and limit congestion. The same thing applies both to the freezing of a large part of the body and to small frost-bites.

If you should ever find yourself on the verge of freezing, with your strength failing, when exposed to intense cold under circumstances which make it impossible to find or to reach shelter, the safe thing to do is to find a big snow drift in a hollow or upon a hillside sheltered from the wind, dig your way

deep into it and settle down. Keep in motion, no matter how painful the effort, or until you can secure the shelter of a deep hole in a snowdrift. It would be better not to sleep, at least not until certain that you are much warmer than before.

GAS—ILLUMINATING.—See *Asphyxia*.

HEART FAILURE.—Heart failure is given as the cause of many sudden deaths, occasionally under the names of *angina pectoris* or *neuralgia of the heart*. Sometimes the attack is preceded by a sense of faintness or nausea, and sometimes it comes without warning. There is a sudden sharp pain in the region of the heart and the patient involuntarily puts his hand there, with the face pale and anxious. Sometimes death occurs before anything can be done, but if possible give hot water to drink, place hot fomentations or other applications of heat over the heart and at the feet, a hot enema, if convenient, and alternate hot and cold applications to the spine. Patient should be covered with blankets as soon as possible to help promote warmth and should be rubbed vigorously under the blankets. Note also the general scheme of treatment given under *Insensibility*, this chapter. Also see detailed consideration of *Diseases of the Heart*, given elsewhere in this work.

Angina pectoris is not an affection of the heart itself but of the coronary arteries which feed the heart. When these become hardened because of deposits of foreign matter the nutrition of the heart is interfered with, causing heart spasms. The application of hot compresses to the chest and abdomen will nearly always relieve an acute attack, but in some cases alternate hot and cold compresses will be more effective. Fresh air is important. See Volume IV for further discussion.

HEAT PROSTRATION.—See *Sunstroke*.

HEMORRHAGE.—The general treatment for bleeding in open wounds, cuts, etc., is indicated elsewhere. (See *Wounds*.)

Hemorrhage from the lungs need not alarm one too much for it will not usually have fatal results. It is alarming chiefly as an evidence of the weakness or disease of the lungs. Patient should be kept in bed and absolutely quiet for three or four days, during which time cold compresses should be applied to

the chest. An ice-cold folded towel, freshened as often as it gets warm, is always to be preferred to the severe chilling of ice-bag. Hot applications to the feet should also be made if patient finds they assist in making him comfortable. Pellets of ice may be given and cold water to drink.

Hemorrhage from the stomach requires the recumbent position, with ice packs or cold compresses over the stomach. Cold water to drink, even ice water, with perhaps one or two teaspoonfuls of lemon juice in it.

Flooding or uterine hemorrhages in the case of women requires rest on the back, and with the hips slightly elevated. This may be accomplished by raising the foot of the bed. Cold compresses or ice bags should be applied, though with heat applied to the feet if the effect is too depressing to the general circulation. Cold enemas will be of great value.

HYSTERIA.—“Going into hysterics” is a form of nervous excitement which in some cases seems far more serious than it really is. It often follows crying, sobbing and other manifestations of emotion upon the part of those who have never learned self-control. The jerky movements of the limbs do not always indicate true convulsions, and though the patient may roll on the floor she is sometimes sufficiently conscious to be careful not to hurt herself. If she is left alone so that she may see that she is eliciting no sympathy or alarm, she will usually recover in a little time. With spoiled children a similar ignoring of their existence is usually the best treatment.

This is not saying, however, that there are not genuine cases of hysteria, or that there is no real excitement of the nervous system in the kind of cases just mentioned. The trouble is much more common among women. Because of consciousness it is sometimes difficult to offer any form of treatment, but if possible it will help to persuade the victim to drink something hot, either water, milk, or lemonade, also to take a hot foot bath and apply cold compresses to the head. If this cannot be done, cold water should be dashed over face and head (affusion, or pouring of the water, if possible; see *Hydrotherapy*), and as soon as possible immersion in a neutral

bath (92 to 95 degrees Fahrenheit) should be adopted for its sedative and quieting effect.

INSANITY, SUDDEN ATTACKS OF.—See *Mania*.

INSECT BITES.—See *Snake Bites*.

INSENSIBILITY.—All that can possibly be accomplished by drug stimulants in cases of unconsciousness or suspended animation can be brought about by natural measures in a manner even more effective and without the dangerous reaction or depression which follows the former. The most energetic vital stimulants are to be found in hot applications over the heart, and in alternate hot and cold applications to the spine. Congestion of any part should be overcome as quickly as possible and the general circulation aroused to a degree as vigorous as possible. Where the hands and feet are cold, hot applications should be made to these parts as well, combined with active rubbing of the limbs. The dashing of cold water over the face and chest, particularly the latter, helps to excite the respiratory function and restore breathing.

Naturally, the treatment in various cases will depend somewhat upon the causes and circumstances, though there are some general rules which will apply in all cases, such as to restore breathing and the warmth of the body. Whenever possible, it is well to ascertain quickly the cause. Insensibility may be caused among other things by fainting, shock or collapse, acute alcoholism, suffocation by gas, drowning, or other means, opium or other drugs or poisons, administration of chloroform or ether, sunstroke, disease of the brain as in apoplexy and epilepsy, convulsions, injury to the brain by concussion or fractured skull, and certain diseases of the heart and kidneys. (See special discussion of *Asphyxia*—including *Artificial Respiration*—*Fainting*, *Apoplexy*, *Epileptic Fits*, *Convulsions*, *Alcoholism*, *Poisoning and Shock*.)

A test for insensibility is found in raising the eyelid and touching the white of the eye. If unconscious, no movement is noted. If conscious, blinking cannot be avoided.

One should note the color of the face, whether pale, flushed or purplish. Note the odor of the breath, for such poisons as

alcohol, chloroform, opium, etc., may be readily detected. Open the mouth and see if the tongue has been bitten, as is likely to be the case in epilepsy.

Lay the patient on the back with the head turned to one side so that the tongue may not fall back, or that vomited matter may not enter the trachea. If the face is flushed, the head should be slightly raised. If pale, it should be laid flat. All clothing about neck, chest and waist should be loosened. If the face is bloated and flushed, it indicates excessive alcoholic indulgence. If it is drawn to one side, it will indicate apoplexy or compression of the brain.

If the eyes are sensitive to touch and light, there is no brain injury. If pupils are unequally contracted, there is brain trouble. If pupils are equally contracted to pin points, there is opium poisoning.

Slow breathing indicates weakness or shock. Snoring or stertorous breathing indicates brain trouble, as does also slow pulse. Rapid pulse indicates sunstroke or fever. If it is quick and thready there is great weakness or shock. If the skin is hot, there is sunstroke or high fever, which should be treated in much the same way as the sunstroke, except perhaps for the head. If the skin is cold, there may be fainting, freezing or intoxication collapse.

If uncertain as to the nature of the trouble, employ the general measures already suggested, rubbing the body, with applications of heat to the extremities. If face is pale, hot applications over the heart, also alternate hot and cold to the spine. If face is hot and flushed, cold affusions or compresses to head. High fever requires cold water sprinkled or poured over the body, or over sheets wrapped around the body.

LIGHTNING-STROKE.—See *Burns*.

MANIA.—In case of mania developing suddenly in country places or where it is impossible to secure rational professional help, it should be known that the most effective treatment consists of cold affusions or compresses to the head, combined with immersion of the body up to the chin in the warm or neutral bath (95 to 98 degrees Fahrenheit), this immersion

being continued until its sedative influence produces quiet. There can be no harm in keeping the patient in the neutral bath for hours or even days, if the case is sufficiently serious to require it. Ice bags separated from the head by wet cloths will probably be most effective for relieving the cerebral congestion, though any convenient cold applications will do. The same measures are to be recommended in all cases of great mental excitement, though if the full bath is not available, a hot foot bath should be given instead.

Large hydrotherapeutic institutions handling such cases are usually provided with what may be called a hammock bath, an arrangement suspended upon straps which makes it possible for the patient to lie in the bath with perfect comfort, while the straps may be used in violent cases to restrain and keep the patient in place. In the absence of such facilities it will be necessary, in cases of violence, to tie the patient, sometimes to tie feet, knees and body to a board. Other sudden attacks of insanity should be given similar water treatment, as should also delirium tremens. In melancholia, however, a short neutral bath, fifteen minutes to half an hour, should be followed by a douche, shower or other really stimulating treatment. In all these cases it will help to have patient drink freely of water, and especially hot water. Full hot (110 to 115 degrees Fahrenheit) enemata should be given before or after the bath, or both, and no food should be offered while the patient is in an excited condition.

MENTAL DISORDERS.—See *Mania*.

NOSE BLEED.—Contraction of the blood vessels of the nasal passages is accomplished by cold applied to the cervical spine or back of the neck as well as to the nose and face itself. The body should be upright, head up, and arms stretched above the head. The colder the water the better. Hot applications to the feet will help, or perhaps a hot foot bath in a serious case, with ice bags to the head, and back of the neck.

POISONING.—[See also *Ptomaine Poisoning*.] If poison has been swallowed it is necessary to empty the stomach immediately. Emetics should be given repeatedly, either of

mustard, common salt or powdered alum, in the proportion of a teaspoonful of either to a glass of water. If away from any house, with nothing but cold water available, this should be used freely, inducing the vomiting by tickling the throat with a finger. Remember that it is imperative to empty and cleanse the stomach thoroughly.

After this, give white of egg very freely, or, if not at hand, use milk instead. Meanwhile hot full enemas should be given, one after another. If the patient seems drowsy and the heart action seems to diminish, hot fomentations should be placed over the heart and changed frequently, with heat also applied to the feet. In corrosive sublimate cases or other mercurial poisonings it will be well to give one or two full and retained rectal irrigations of an albuminous liquid, such as milk with white of egg beaten up in it.

After continuous vomiting and thorough rectal irrigation, full hot baths (105 degrees Fahrenheit) will be valuable for eliminating the poisons absorbed into the circulation, combined with rubbing. Meanwhile the patient should continue to drink large quantities of milk, or water containing milk or white of egg beaten up. There are some special antidotes for various specific poisons, but the above treatment will always answer, and especially when one does not know the nature of the poison. Hot air baths are also effective as eliminants in such cases, and hot blanket packs (see Chapter II) may likewise be substituted for the hot tub bath if the latter is not convenient or possible. These should be followed by quick cold ablutions.

Opium and other poisons not swallowed should have similar constitutional treatment, including the hot enemas, though not the emetics. Copious drinking of hot water, if conscious. If unconscious, alternate hot and cold to spine, hot fomentations to heart and feet, or, if convenient, full hot bath with vigorous rubbing. In some cases artificial respiration is necessary, combined with heat and rubbing.

• PROSTRATION, HEAT.—See *Sunstroke*.

PTOMAIN POISONING.—Ptomaine poisoning is the result

of the putrefaction developing in spoiled meats, fish, cheese, salads, sometimes bad ice cream, etc. There is collapse and subnormal temperature. The characteristic symptoms of vomiting and diarrhoea indicate Nature's method of clearing out the alimentary canal, and we should help in this process. Emetics (one teaspoonful of mustard, common salt or powdered alum in one glass of water) should immediately be given and repeated to empty the stomach thoroughly. Lavage is useful in such a case, but it is slower, and the ordinary household does not usually contain the special apparatus, so that the free use of emetics may be depended upon. After this the patient should *drink large quantities of water*, and the more water the better. The use of a very weak solution of potassium permanganate (1:5000) is often recommended, but this is only for the purpose of increasing the oxidation of the debris. The profuse drinking of lukewarm (insipid) water will usually operate best to wash out the stomach. At first the water should be tepid to induce further vomiting, but afterward hot for solvent and sedative purposes.

Simultaneously the intestines should be relieved by two or three full warm or hot (115 degrees Fahrenheit) enemas, repeated as often as necessary, so as to introduce as much water as possible. All this should be continued without cessation until the cold skin becomes moist and it is plain that perspiration of an eliminative character is established. Meanwhile cold compresses should be placed over the region of the heart every thirty minutes as a cardiac tonic. Following the above treatment a neutral bath can be recommended (95 to 98 degrees Fahrenheit) for the sake of both its eliminative and sedative influences. If the condition of collapse seems imminent, warm full baths (98 to 105 degrees Fahrenheit) may be given immediately after the first one or two full enemas, lasting for twenty to thirty minutes with moderate friction, thus also promoting greater activity of the skin. The copious water drinking should be continued while in this bath, and thereafter the giving of the enemas should alternate with these warm baths.

SHOCK.—In many severe accidents and also in many which are not severe, the victim suffers from a condition of shock to the nervous system which is often more serious in itself than the other injuries to flesh and bone. Such shock is sometimes experienced through fright or other circumstances in which there is no other physical injury, and in many cases has proven fatal. In many instances an injured one has really died from the shock when he was supposed to have succumbed to the effect of a wound or burn. The face becomes pale and the limbs tremble, the victim also falling to the ground in many cases.

If there is any injury it should be attended to promptly, and bleeding stopped as soon as possible, with every assurance to the patient, if he is conscious, that the injury is not serious. Those attending, though sympathetic, should not allow themselves to express their anxiety through their behavior. The patient should not be alarmed or excited. He should be made as comfortable as possible, lying on his back for perfect relaxation. Fomentations, hot water bags or any other available hot applications should be placed over the heart and abdomen, while warmth should also be applied to the feet. The patient should also be induced to drink some hot water or weak hot lemonade as soon as possible. If the shock is prolonged and if there are no injuries of such a nature as to prevent, immersion in a full warm or neutral bath (92 to 95 degrees Fahrenheit) for one or two hours may be recommended. Whiskey, black coffee, beef tea and other similar stimulants should be avoided.

SNAKE BITE.—In the case of all poisonous bites instantaneous measures should be taken to prevent the poison from getting into the circulation, or at least to allow as little as possible of it to do so. This is sometimes a difficult thing if one is alone in a remote forest, but this is all the more reason for acting promptly and decisively. The first thing to do is to apply a ligature just above the bitten part, if in a limb, and then another just below, thereby shutting off the circulation in the locality as quickly as possible. Any strap or stout

cord will serve for a ligature, or even a handkerchief, which may be tightened, after being tied, by inserting a stick and twisting.

Next, if possible, the wound should be saturated thoroughly with a mild solution of acetic acid (equal parts of white vinegar and water will answer), or cauterized with the point of a white-hot iron. The latter is not as dreadful an experience as it may seem, for it is done instantaneously and may not hurt as much as an ordinary pinch. If in the woods and unable to cauterize then at least cut out the poisoned spot promptly with your knife. At the very worst, bite it out, provided you have no cuts or sores in your mouth or lips. Any abrasions in the mouth would catch the poison, but if the mouth is in a healthy condition the bite may then be sucked out as well as possible, carefully and frequently spitting out the poison and blood. The more bleeding the better, though the ligatures will prevent bleeding and suction, preferably by cupping, must be depended upon. If there are sores in the mouth, sucking the bites is perilous and one must pinch or squeeze the parts toward the wound so as to force the blood and fluids out through it.

As soon as possible after these first steps have been taken, violent eliminative measures should be adopted. Alcohol is not an antidote, as commonly supposed and actually often causes death through alcohol poisoning. Better to drink hot water in large volumes, also using repeated full hot enemas (115 degrees Fahrenheit). Fresh air and deep breathing are essential. And especially should some powerful means of accelerating the activity of the skin be employed. The full hot bath, hot air bath, hot blanket pack or even wet sheet pack should be employed, together with massage. If patient becomes drowsy and the heart action decreases, hot fomentations over the heart may be employed. If heart failure be feared hot fomentations to the spine to stimulate the roots of the nerves governing the heart's action may be employed.

Insect Bites of a serious nature, such as those of a tarantula or large venomous spider, should be treated the same as the snake bite. They are likely to be more serious, for it is not

always that one who is bitten by a venomous snake is really poisoned. Sometimes the poison ducts in the fangs do not work perfectly, and since the victim recovers, never having been poisoned, he gives all the credit to the whiskey which he has imbibed. The only poison which he has suffered from has been the alcohol.

In bee stings and less important insect bites, the sting should be extracted if it can be seen, the poison sucked out if the mouth is healthy, and the local part immersed in hot water.

Dog Bites are not serious in most cases, but if the animal has been irritable and there is any reason to suspect developments of hydrophobia in the animal, a ligature should promptly be applied above the wound, the same washed with warm water to encourage bleeding and then cauterized. If one is alone, it may really be treated the same as a snake bite.

It is better to throw aside any fear of "rabies" or "hydrophobia," and consider solely the condition and symptoms of the person bitten; and of all things beware of the Pasteur Institutes. We have records of patients treated with the serum fatally, when other persons bitten by the same dog at the same time, but not treated, kept right on living. At the same time the bite of a dog, unless the saliva is pretty thoroughly kept out of the wound by means of the teeth going through several folds of clothing, may have a very serious effect, since, as we know, in animal experimentation the saliva of a healthy man injected directly into the circulation of guinea-pigs has occasionally caused convulsions and death. So, it might possibly happen that the saliva of a perfectly healthy dog, whether he be angry or merely snapping in play, might work mischief. But in a thousand cases all that would be required is simply keeping the wound clean by bathing in a very weak solution of acetic acid, just strong enough to be pleasantly acid to the taste (like weak vinegar.)

• **SPRAINS AND STRAINS.**—Sprains are very painful and sometimes, when important ligaments are torn, require a longer time to mend than broken bones. The first and most absolute rule of conduct in connection with a sprain is perfect

rest of the injured part. Under no circumstances must it be used or any strain be placed upon it until it is thoroughly mended. Passive exercise in the form of massage may be administered to neighboring and other parts of the body, but the sprained tissues must be let alone.

Clothing should be first removed, if necessary being cut away. If the ankle is affected the swelling will make it practically impossible to take off the shoe in the ordinary way without straining and bruising the injured tissues. A sharp knife should be employed to cut it away.

Just as soon as possible the injured part should be immersed in water as hot as can be borne. This will not only relieve the pain but will further the process of mending. Sometimes, though not usually, cold water will give greater relief, and in such a case should be employed for fifteen to twenty minutes at a time. In such cases the best results will be obtained from the alternate use of hot and cold water. In nearly all instances, however, the prolonged hot water treatment is the thing. It is best not to have the sprained part hang down. If it can be raised, this will help to limit congestion and relieve pain. This should be kept in mind when immersing in hot water. If the wrist is affected, for instance, instead of letting the arm hang down to a basin of water on a chair, it is best to place the basin upon a table, patient seated beside it, so that at least the elbow is raised above the level of the shoulder while hand and wrist are immersed. In treating the ankle, patient should lie down, the knee raised over the edge of the vessel containing the hot water in which the injured part is submerged.

After prolonged treatment of this kind has reduced the extreme inflammation and relieved the pain, the part may thereafter be swathed in cold wet cloths, the coolness renewed from time to time by sprinkling with cold water or squeezing out a sponge over it. The part should also be kept elevated upon pillows meanwhile.

Strains should be given the same treatment, though they are not usually so serious and in many cases will

respond just as well to mere wrappings with cold wet cloths. In case of pain, however, the hot water treatment should be given.

STRAINS.—See *Sprains*.

SUFFOCATION.—See *Asphyxia*.

SUNBURNS.—See *Burns*.

SUNSTROKE.—In case of sunstroke the patient should be placed in a shady spot, but not carried farther than absolutely necessary to reach a place where treatment can be begun. A cold compress should be applied to the head and frequently freshened and cold water poured over the entire body, especially the head. A complete cold bath with vigorous rubbing is even better, but at least the pouring or sprinkling of water over the body, or over sheets wrapped around the body, should be continuous. Cool or cold enemias should be given, and if the case seems serious cold compresses to the spine. If there should happen to be an alarming depression of the vitality of the body, however, as shown in great pallor of the face,



Compression of the temporal artery, best applied with the thumb at a point one finger's breadth in front of the opening of the ear, pressing firmly against the bone.



Compression of the occipital artery, supplying the back of the head. This passes behind the mastoid process, and may be compressed at a point two fingers' breadth behind the center of the back of the ear.

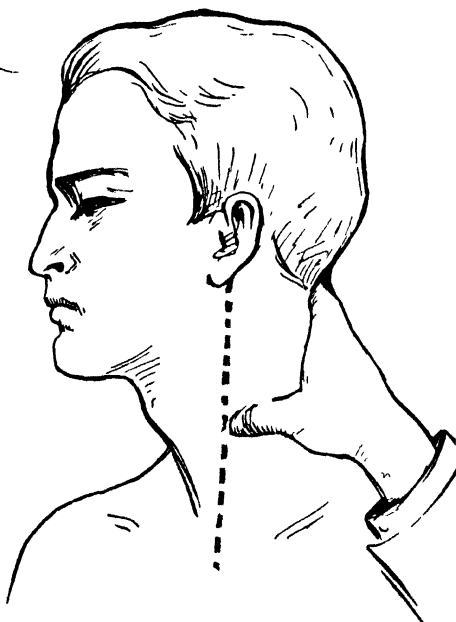
then especially the body should be rubbed vigorously by three or four persons, with hot applications to the head and to the heart.

A mistake almost universal with amateur hydropaths and doctors and nurses in our best hospitals, so-called, is to imagine that if, say, a cold compress is good an ice-pack is better; hence the ice-coil for the head or the abdomen is often employed mischievously. Moreover, in ordinary institutions whatever good may or might have resulted from the water treatment is counteracted and overwhelmed by the drugs employed in conjunction. This is one of the obstacles to the advancement of hydrotherapy.

Heat Prostration is chiefly the result of excessive clothing and injudicious diet in Summer and it is a comparatively simple matter and far less likely than sunstroke to prove serious. In this case a hot drink will stimulate the heart and a neutral



Compression of both facial arteries with thumb and finger. This artery passes over the lower jaw at a point one inch in front of the angle of the jaw on each side. Both should be compressed at the same time, with thumb and finger, as illustrated, for any wound in the face, since there is a free connection between them.

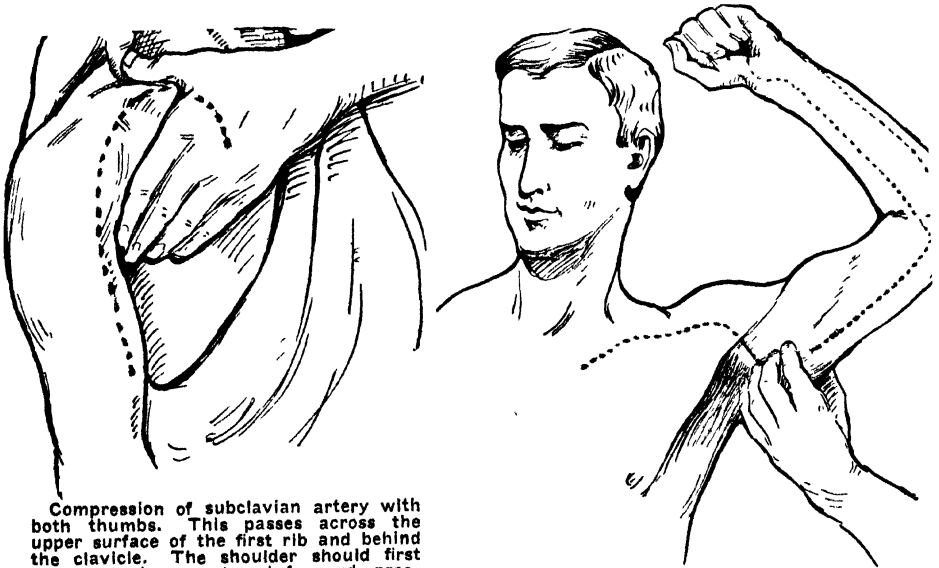


Compression of the common carotid artery, the most important of those supplying the head. Press deeply and firmly with thumb, at a point one and one-half inches above the joint between the sternum and the clavicle. Press backward and inward.

bath (92 to 95 degrees Fahrenheit) lasting for twenty minutes with moderate rubbing will usually restore the patient. This should be followed by quick cold ablutions or a short douche. This cold douche should be repeated three times a day thereafter until complete recovery is accomplished.

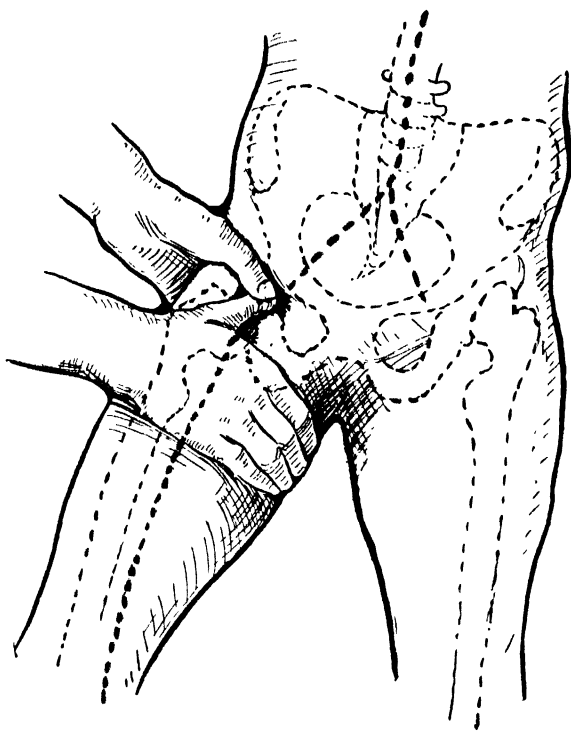
Treatment for heat prostration should embrace stripping the patient naked, placing the body in the shade, frequent changes of the cold compress—a double fold of coarse towel wrung tightly from ice-water, or the coldest water obtainable—over the entire head, first wetting the hair freely. When, from neglect, or bad treatment, the case has gone on to a condition in which the body temperature is subnormal and the case in danger of fatal termination, then there is occasion for a hot pack of the feet and lower legs by means of several folds of woolen blanket saturated with hot water (testing the heat with back of hand to insure against scalding), wrapping the blanket around the legs and employing an outside wrapper of several folds of dry sheet to retain the heat as long as needed.

The patient should be encouraged to take small portions



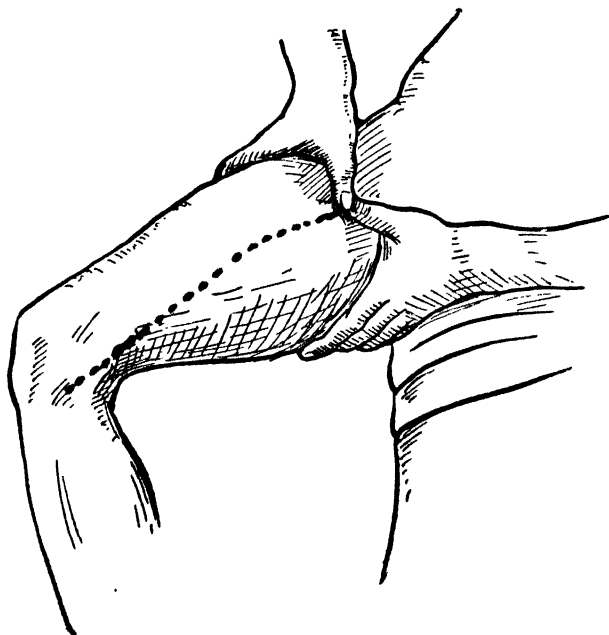
Compression of subclavian artery with both thumbs. This passes across the upper surface of the first rib and behind the clavicle. The shoulder should first be drawn downward and forward, pressure being then applied downward and backward and inward at a point behind the middle of the clavicle, or back of the hump which is so conspicuous at this point. Press downward and inward.

Compression of the axillary artery, best reached in the manner illustrated, after first raising the arm, by pressing with all finger tips outward and backward against the bone of the arm.



Compression of the common femoral artery, which passes over the center of the pubes. Compression should be made in the groin as illustrated, pressure being applied directly downward, or, lower down, four fingers' breadth below the fold of the groin, pressure here applied outward after the knee has been bent and the thigh rotated outward.

Compressing the superficial femoral artery, with both thumbs, one upon the other.

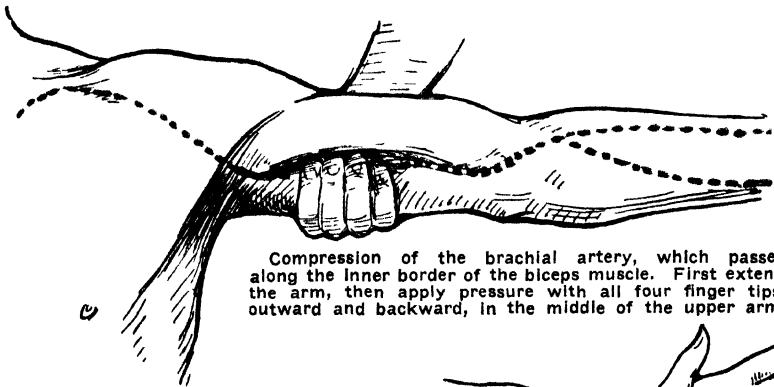


of moderately hot water frequently for the double purpose of this internal heating and to maintain the normal fluidity of the blood. In cases of the other sort, when the temperature is abnormally high, frequent small portions of fresh, cool water should be given, being better than ice-water.

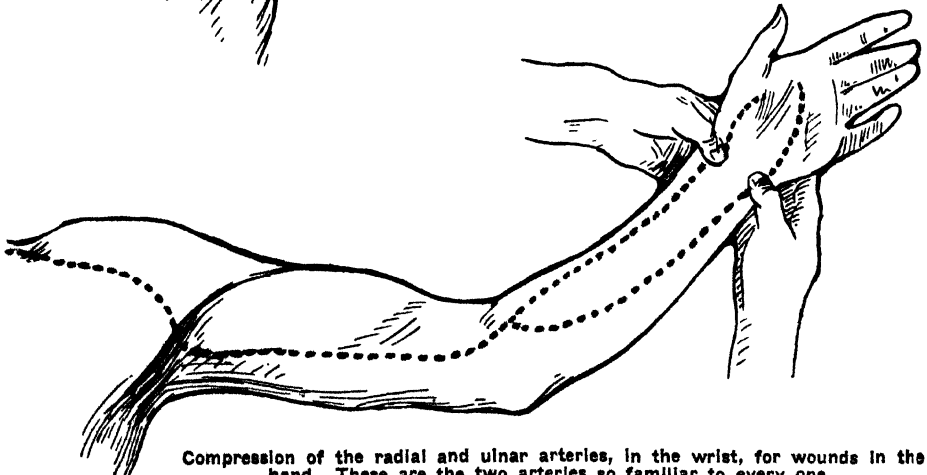
UNCONSCIOUSNESS.—See *Insensibility*.

URAEMIC CONVULSIONS.—See *Convulsions*; also *Insensibility*.

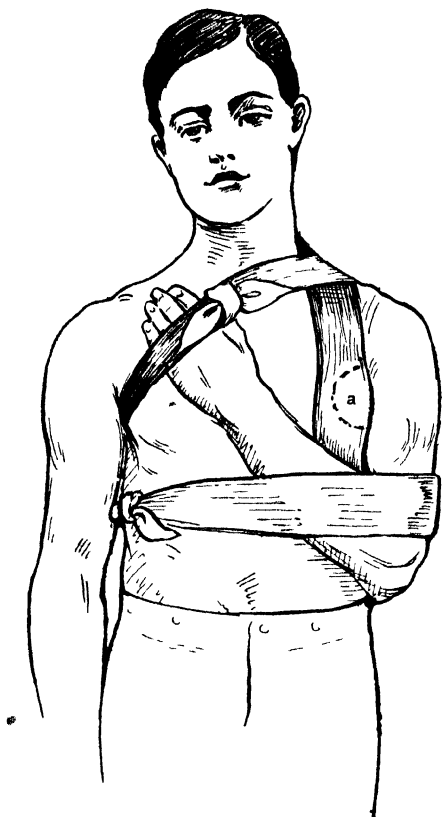
WOUNDS.—Cuts and wounds of all kinds causing loss of blood should have prompt attention, otherwise loss of life may follow. If the blood is bright red and comes in jets or spurts, one may know that some important artery has been severed and a ligature should be applied above the wound, if in a limb. If on the trunk of the body, pressure should be made just above the wound, or between it and the heart. This may be done by any solid object, well-padded, wood, a rock, or



Compression of the brachial artery, which passes along the inner border of the biceps muscle. First extend the arm, then apply pressure with all four finger tips, outward and backward, in the middle of the upper arm.



Compression of the radial and ulnar arteries, in the wrist, for wounds in the hand. These are the two arteries so familiar to every one.



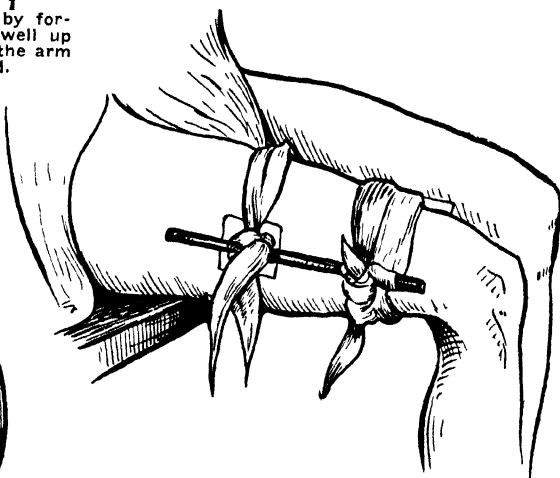
Compression of axillary artery by forcible flexion. Place a hard pad well up in the armpit at a, and then bind the arm tightly to the side, as illustrated.



Compression of the popliteal artery by forcible flexion, placing a hard pad in the bend of the knee and then binding tightly. Another bandage farther from the knee would be advantageous.



Compression of the brachial artery by forcible flexion, placing the pad in the bend of the elbow, flexing the forearm hard against the upper arm, and then binding in place, tightly.



Showing method of applying an improvised tourniquet to the thigh or other limb. A handkerchief or any other available cloth or rope will answer. It is best, if possible, first to place a small hard pad over the superficial femoral artery on the inside of the thigh, then placing a stick, lead pencil or other lever through the bandage and twisting until tight, after which another bandage may be applied to hold the lever in place.

anything convenient, and held in position to press in firmly by a bandage or belt. If the blood is dark in color and flows smoothly, then some vein has been opened, and the ligature should preferably be made just below the wound. Any strap, rope or handkerchief may be used, tying first, then inserting a stick, lead pencil, spike or other similar object and twisting. Above all things, one should not try to dislodge any clots of blood.

If large arteries are opened it may sometimes be best to compress them with the fingers. One should know where to find them. For an injury in the side of the upper part of the head, the temporal artery should be compressed with the thumb, if in the forepart of the head. This will be found one finger's breadth in front of the opening of the ear, under the temporal bone. If back of the head, the occipital artery should be compressed with the thumb, to be found two fingers' breadth from the center of the back of the ear.

Compression of the facial artery can be accomplished by pressing at a point one inch in front of the angle of the lower jaw. The artery passes over the jaw at this point. Both of these should be pressed at once, *i.e.*, on both sides.

The common carotid artery in the neck can best be compressed at a point one and one-half inches above the joint between the breastbone and the collar-bone, pressing backward and inward. The subclavian artery may be best reached at a point behind the middle of the clavicle or collar-bone, where the hump of this bone is felt. First lower and draw the shoulder forward, then press downward and backward with both thumbs. This pressure must be firm and determined.

In the upper arm, the axillary artery may be best compressed in the armpit, or just below, first raising the arm and then pressing outward and backward. The brachial artery passes along the inner border of the biceps. First extend or raise the arm, with thumb up, and then press outward and backward. The radial and ulnar arteries in the wrist are well known and may be compressed readily with fingers or thumbs.

In the upper leg the great femoral artery may be reached

best in the groin, just in front of and a little inside of the femur. Compress with four fingers. The popliteal artery passes down the middle of the ham, pressure in the center of the middle of the ham, applied directly forward and very vigorously.

Very cold water is effective in stopping hemorrhage, and the colder the better to produce contraction of the blood vessels. It should be prolonged so as to inhibit circulation. It should not be so used as to stop the forming of clots of blood. The contraction will not be permanent, but too prolonged application will tend to impair the vitality of the parts, so that after an hour or perhaps a half hour very hot water would be more effective. The wounded part should be raised as high as possible.

If possible, only previously boiled water should be used. Clay or other possibly septic matter should not be applied to an open wound. Only aseptic dressings should be allowed; they are better than antiseptic in most cases. (See *Bandaging*.)

CHAPTER V.

ON THE TREATMENT OF ACUTE AND CHRONIC DISEASES.

THIS chapter is devoted to the general consideration of the treatment of disease by Physcultopathic methods.

The reader who has devoted his attention to the preceding portions of this work has now an understanding not only of the structure of the human body and the various functions of its several parts, but also of the fundamental principles and important natural measures essential in building health and energy or overcoming disease. He has entered into a comprehensive study of the physiological requirements of diet and exercise, as well as of the value of fasting, hydrotherapy, mechanical Physcultopathy and other forms of treatment, and he is now ready to take up the practical application of these various important measures to the cure of disease. In the succeeding volume of this work the reader will find a detailed consideration of each and every form of disease, or in other words, the causes, manifestations or symptoms and indicated treatment of all common maladies, but in order to treat any of these ailments properly or successfully it will be necessary first to thoroughly study and comprehend both the general suggestions and detailed instruction in the treatment of disease contained in this and in the chapter immediately following.

In the beginning let me advise above all things that you avoid experimenting. Follow these instructions in every minute detail as closely as you possibly can. Remember that the instruction given herein is the accrued result of a quarter of a century of careful study of the cause and cure of disease, and the accuracy of the conclusions presented has been proven in thousands of cases. It will be seen therefore that I am not theorizing or guessing.

DANGEROUS TO COMBINE THESE METHODS WITH MEDICAL TREATMENT.—Do not “mix” this treatment with any other. Do not try to harmonize these methods with drug methods.

Such a policy is dangerous. For instance, any drug that might be given in connection with the regimen that I recommend will sometimes have an effect far different from that intended. One can never predict the exact effect of a drug. My method is to develop the delicacy of nerve adjustment; to make the nerves more sensitive so that they can properly direct the vital energies of the body. The drug method in many instances has a result directly opposite to this. It "dopes," the nerves and prevents certain vital activities; consequently when drugs as ordinarily prescribed are used in connection with our system of treatment, the usual effects of such drugs are often greatly augmented, and in some cases it might actually be the direct cause of death.

APPETITE SHOULD BE CONSULTED.—*Remember my previous instructions in regard to the proper uses of food.* When following a diet one should never eat without a true appetite. An appetite means that you will be able to enjoy the food you eat at the time you eat it. In some cases when one goes through a prolonged dietetic experiment and greatly lessens the amount of food he is eating, the digestion is weakened, and the appetite is blunted to a certain extent, or in some instances almost destroyed. Under such circumstances it frequently needs to be cultivated, and the milk diet or some other easily digested dietetic régime should be prescribed for the purpose of stimulating the digestive energy with a view of restoring the appetite. You will, therefore, realize that a ravenous appetite is not always essential; you need not necessarily be really hungry at meal time when first beginning such a dietetic regimen, provided that, after you begin to eat, the food tastes good to you. As a general rule, however, it is a bad plan to continue for a very long period the habit of eating without having an actual desire for food before beginning the meal.

For convenience in prescribing various diets I have numbered them. For complete details in reference to them I would refer the reader to Chapter VI of the present volume, containing *Dietetic Regimens*.

As the reader well knows, different treatments are often

required for cases suffering with the same disease when there is a difference in the physical or general vital condition. For instance, a patient suffering with pneumonia who is able to be up and around, will require forms and degrees of treatment entirely different from those for one who is lying in bed and so far advanced that breathing has become difficult. A patient who is very fleshy and anemic will usually call for a different prescription from one who is of normal weight and possessed of a great deal of vital energy. A thin person will require a different treatment from one who is fleshy, and, therefore, in describing the various cases, we class them in such a manner that when outlining a course of treatment for any particular disease (and it is necessary to prescribe different methods for those who may be in varying stages of physical health) the prescription can be varied in accordance with the requirements of different cases.

GOING TO BED WHEN SICK.—I differ very decidedly from the ordinary medical practitioner as to the necessity of going to bed when sick, except in cases of extreme weakness or vital depletion. Do not go to bed unless you are virtually unable to be up and about. The going-to-bed plan will in many cases prolong the illness and make it far more serious. Keep up and about, sitting up and walking as much as you possibly can, no matter what your ailment. Of course, if you find that being up and around is actually harming you, then naturally you should not continue the practice; but in nearly every case you will find that the effect of your activity is exactly the opposite. Even in the most ordinary circumstances of life one is accustomed to take a certain amount of exercise, and, when the digestive system and the excretory and other activities of the body are not able to secure the stimulation of the various mechanical movements of the body such as are involved in walking and moving about, then the functional processes are not carried on nearly so effectively; under such circumstances, therefore, the disease is actually prolonged. Many readers will ask if I expect them to be up and walking around with pneumonia or typhoid fever

or other similarly serious diseases. I say emphatically that I do, provided they have not definite symptoms that would indicate the necessity for keeping quiet. For instance, if one is at a stage of typhoid fever where there is liable to be a hemorrhage of the bowels, then he should move around with considerable care, and there may be times when absolute quiet is essential. There are also other occasions, in acute illnesses, when all of the vitality of the body is needed to fight the disease, with no energy to spare for any other purpose. In such a case Nature usually enforces her demands through a sense of extreme weakness, so that the instinct of the patient will suggest avoidance of muscular effort. This, however, is true only in the most severe and critical cases, and, as a general rule, one will be better off by following my suggestion, to be up and around as much as possible when ill.

VENTILATION.—Let me emphasize the necessity for thorough ventilation of the living and sleeping rooms when one is ill. If the patient is up he should try to spend all of his time out-of-doors. If it is possible to have a cot or bed in the open air, even upon a roof, so much the better for the sick man who is confined to his bed. At least, the more nearly the patient's head can be so arranged that he can breathe the outside air the better. If his head is actually placed out of the window so as to insure a perfect supply of fresh air, he will be all the better for it. Oxygen to the sick is an energy-producing element—indeed, the most important of all of the essentials of life. (See Volume I, pages 5-18.)

MENTAL ATTITUDE AND PSYCHOTHERAPY.—It is well to mention here the extraordinary importance of a proper mental attitude. No matter how sick one may be he should do his best to eliminate from his mind all idea of the seriousness of his disease; he should make light of it as much as he possibly can. Indeed, if properly treated by our methods, even the serious diseases actually cease to be serious. Never become hopeless. Determine that you will get well. The importance of this mental attitude cannot be too strongly emphasized. Ultimately it may mean the difference between health and disease, or even

life and death. Belief in your ability to get well is of primary importance.

Psychotherapy, or the treatment of disease by mental methods is based on suggestion, belief, and trust. Suggestion is anything which causes the mind to act or react. Healing suggestions are those which cause the mind to act favorably. They may be conveyed from one person to another, using the spoken or written word, gestures, facial expression, the hand, etc., and telepathy, or they may be given by the patient to himself. Coué's suggestion, "Day by day in every way I am getting better and better," is one of the best known of auto-suggestions (those given by the patient to himself). However, any suggestion which arouses hope and a belief in recovery will be of value. One of the best suggestions that one can give to himself is to believe absolutely that he can and will get well. Never forget that the mind controls the functional processes of the body and belief controls the mind. Belief in health will cause the mind to direct all the functions of the body in a healthy manner.

All treatments carry their element of suggestion. A patient follows a certain diet or takes a certain treatment because someone has suggested that it would be good for him and he has accepted that suggestion. A cold pack suggests to the body that more blood is needed in the part to which it is applied in order to counteract the chill, and the body responds with the well-known feeling of warmth that follows a cold application. If everyone were able to react to the spoken word as well as they do to such a treatment, all they would need would be to have someone tell them to get well. After that, right living would keep them well. The trouble is we do not sufficiently trust the power and intelligence of the mind and body. Even so, every expression of encouragement by others, whether it be words, glances, gestures, etc., helps the patient. On the other hand the patient may be rendered much worse by a discouraged and hopeless attitude on the part of others, for this gives him bad suggestions. Even unspoken thoughts may so affect him for they reach him telepathically, patients being very

sensitive to discouraging impressions. This is further discussed in the next section.

In the treatment of children (or adults, too, for that matter) suggestions can be very effectively given just as the patient is going to sleep. Then the body is thoroughly relaxed and the mind quiescent, and conditions are most favorable for the acceptance of the suggestion. Any suggestion must be accepted (believed) by the mind before the mind will act upon it. Suggestions can also be given telepathically if the patient is at a distance or when he is asleep, as well as when he is present and awake. Visualize the patient if possible, then repeat the thought you wish him to think with the intention that he shall think it. Some patients are more susceptible than others to this form of suggestion, a few may be apparently unaffected.

In order to get the most value from the use of the mind in the treatment of disease, believe absolutely that you can and will get well; then act, in so far as is possible, as though you were well; and constantly suggest to yourself that you are strong, healthy, confident, cheerful, hopeful, and that every part of the body is functioning normally. Then trust the inherent intelligence in the body to do its work well.

SUGGESTIONS TO ATTENDANTS.—For the special benefit of those who may assist in the treatment of patients who are unable to take care of themselves, the following suggestions are given. The various treatments that will be recommended for cases of this kind can easily be given in the ordinary home by any one with a moderate amount of intelligence. Naturally the attention of a suggestotherapist, and the facilities of an institution especially prepared for treatment, would be better, but if the instructions are followed closely you can depend upon equally good results through this home treatment in virtually every instance. For an attendant, I would advise first of all an optimistic attitude. Never under any circumstances even hint that there is a possibility of a turn for the worst.

CLASSIFICATION OF DISEASES.—The various forms of disease are usually classified as acute or chronic. In acute

disease the derangement is sudden and often more or less violent, and may usually be overcome in a comparatively short time. Some acute ailments have a definite term of existence, such as measles, smallpox, and various fevers. They are said to "run their course" in a period of approximately so many days or weeks, but this really means that as a rule it takes just about that long in the case of each malady for the disease processes to accomplish the removal from the body of the wastes, toxins, poisons or whatever other foreign matter may be causing the disease. This period can be shortened by proper scientific treatment, though it can be lengthened by various unfavorable circumstances or treatments. An acute ailment becomes chronic if the foreign matter or obstructions of an acute trouble, not being thoroughly removed, remain in the system and continue to interfere with normal functions.

Chronic diseases are usually the result of slow or gradual accumulations of waste products. Long standing cases of this kind are not so easily restored to normal, for the tissues have become altered or the organs weakened through perhaps years of abnormal influence. But by invigorating exercise, a proper diet and persistent, thorough attention to one's habits a successful recovery can almost invariably be made, even in the most stubborn cases.

TREATING ACUTE DISEASES.—In the treatment of an acute disease it is important to bear in mind that all acute manifestations are due to practically the same cause. The Allopaths may claim that the disease comes from a germ which is taken into the body. The Osteopaths maintain that it is caused by a lesion in the structure or alignment of the body. But the conclusive fact is that the symptoms of acute diseases generally indicate foreign elements in the blood, that are seeking an outlet, as I am positively convinced and as I have amply proven in my experience with thousands of cases, directly and indirectly. Therefore, if fevers of various kinds, pneumonia, tonsillitis, pleurisy and numerous other complaints that are to a certain extent allied, come from the presence of certain foreign elements in the blood, then it is quite clear that the first

effort in the scientific adaptation of remedial agencies should be to assist the body in every conceivable way in the process of eliminating this foreign material, which is in reality the direct cause of the symptoms which appear in these various diseases. In many cases this foreign matter represents accumulated wastes, the result of continued imperfect elimination, in which case the general scheme of treatment would seem to be obvious.

The principal difficulty that will be encountered by all who attempt to treat acute ailments that are liable to become serious will be the necessity of making a decision as to which is the best treatment in various changes that ensue in the symptoms that appear in these various and in some instances dangerous complaints.

As might be expected, the respective policies to be adopted in the treatment of a chronic and of an acute disease are decidedly different, even though the fundamental essentials are in many cases not dissimilar. Acute diseases often require immediate, and in some cases, drastic treatment in order to obviate the possibility of a speedy death. Death may also come as a result of chronic disease, but in such a case it is reached through slow and gradual processes. And the treatment of chronic diseases in nearly all cases is largely a matter of building increased vitality through a general régime that can be easily and safely prescribed. However, in treating an acute disease, the various natural remedies used are prescribed with a view of bringing about certain physiological changes and accelerating the processes of elimination. In other words, instead of using drugs for stimulating the activities of the tissues or organs, we use our natural methods. Drugs exhaust and paralyze the organs and functions. Our methods invigorate and assist the normal functions and vital actions. And a trial of the suggestions that we offer will usually bring about such quick and amazing changes for the better that drug medication is likely never to be used again.

One can often teach best by means of illustration, and in order to familiarize my readers with the general principles of the application of our methods in the treatment of acute ail-

ments, and the reasons for advising certain measures, and for changing these as the symptoms vary, I will take a case of pneumonia. I will trace this case day by day through the various changes that occur, and will explain in detail my reasons for making changes in the treatment as the symptoms indicate their need.

In this hypothetical case of pneumonia, the patient is of average weight, the pains in the chest and the other usual symptoms connected with the disease are present; the pulse is high and strong and a slight fever is noted. The patient is weak but has not as yet taken to his bed. At once every effort should be made to divert the disease; that is, to so materially lessen its severity that there would be no necessity for the patient to go to bed. Practically speaking, this would mean reducing the condition to what might be termed an unusually hard cold.

With this end in view we should first give our attention to the necessity for thorough activity of the bowels. Full enemas, which should be used on numerous occasions, because of their exceptional value, are somewhat weakening in their influence; in other words, they consume a certain amount of one's vital energy. As a rule in a case of this kind, especially if the patient has been constipated, I would use a moderately full enema, employing from two to four quarts of water, the water to be about the temperature of the body. If the fever is very high the water should be cool, though not cold, perhaps 80 degrees F. In cases where the temperature is low, the enema should be used as hot as the patient can bear it (probably about 115 degrees F.). Even if the patient has not been constipated I would still prescribe this method of increasing the activity of the bowels. This, however, may also be accomplished to a certain extent through the stomach. For this purpose one-half teaspoonful of salt dissolved in a glass of hot water is very good, also two or three tablespoonfuls of olive oil could be used. A small quantity of unfermented grape juice taken with an equal portion of water is cooling and sometimes laxative.

Next comes the necessity for stimulating the activity of the kidneys, and for this purpose one should materially increase the amount of liquid the patient is taking in the form of water and perhaps pure fruit juices. The very free drinking of hot water would be of exceedingly great value. This water should be taken as hot as possible without discomfort. If the patient would take a large quantity of water at the very beginning of the attack, it would help materially to divert the disease, which is the main object at this particular stage. If the water is unpleasant to the taste it can be flavored with lemon juice, or a pinch of salt could be added. If there is soreness in the throat a small amount of honey would not be objectionable. But in any case the patient should drink as much water as possible. This in itself will usually assist in securing increased activity of the stomach and bowels, without the addition of anything else.

It is well to keep in mind that unless there is definite recuperation from every treatment that is given, your efforts in this direction are liable to be productive of more harm than good. In other words, you can give a patient so much treatment that it may hasten or be the actual cause of death. One can overdo almost anything, though this is not likely in the matter of drinking water, and there is here little necessity for recuperation. But if you were to give a very full enema, about all that the colon can hold, one that would leave the patient weak and languid, then a rest would be required.

After being assured, however, that the patient has been materially rested, your next effort should be devoted to the stimulation of the nerve centers. This can best be accomplished by Physcultopathic Treatment D. At the completion of this treatment the patient should be allowed to rest for a few moments if there is any sign of fatigue, after which it would be of decided advantage for him to take some exercise that will more or less vigorously use the muscles along the spine, from the base of the skull to the small of the back. For instance, when raising the chest of patient from the bed, as he lies face downward, request him to hold himself up in that

position for a moment; repeating this several times. Then ask the patient to bring his head back as far as possible, and resist the movement slightly with your hand. Following these efforts, if you have been careful to keep the spine covered with a very hot cloth during the entire period of the treatment, the patient ought to feel like getting up and moving around; and, if a walk is prescribed for him, to be continued until he is at least fatigued, it will be of distinct value.

Above all things it is imperative that absolutely no nourishment should be taken, since the body is in no condition to receive or to digest food. Furthermore, the symptoms of pneumonia sometimes indicate an over-nourished condition of the system, and when the body is crowded with such an excess of food a fast is absolutely essential in order to bring about assimilative equilibrium. There is really no genuine appetite, and the fast should be continued until all serious symptoms have disappeared and a normal hunger-appetite has asserted itself.

In many cases of pneumonia this one treatment will divert or change the course of the disease. It will eliminate such a large amount of the poison that is seeking an outlet that the disease will be reduced to practically nothing more than a heavy cold. It would always be advisable the next day to repeat the Physcultopathic Treatment D, and the free drinking of hot water should naturally be continued.

But let us now assume that the patient has taken to his bed; that before the next day arrives he is too weak to be up and around; that his temperature is still high; his pulse high and strong; that there are general signs of increasing weakness; that the severe pain in the lungs and region of the chest continue.

First of all, in this disease especially, though the same advice applies to all complaints, the patient should breathe the outside air or as nearly so as possible. If a draught is not unpleasant, it would be better for him to remain in such a current of air, for this would insure, beyond all possible doubt, that every breath he draws is clean, fresh air. When a draught is

unpleasant, the patient can be shielded from it and still secure a plentiful supply of pure air. All windows should be opened as widely as possible. The best place for treating pneumonia and practically all other diseases is out of doors, and in the city the roof of the house can be used.

After being satisfied definitely that the supply of air is all that could be desired, next give your attention to the drinking of water, encouraging the patient to drink freely at frequent intervals. At this time he can use hot or cold water, whichever he prefers. It may be flavored with a pinch of salt, lemon or orange juice or honey, if desired. If there should be no satisfactory action of the bowels a moderate enema should be used.

The first thing in the morning the patient should be given a cold wet sheet pack. You must be sure that the patient is thoroughly warm before being placed in the pack, for if otherwise it is better that he be first warmed with two or three minutes spent in a hot bath, or else by placing three or four hot water bottles in the bed. It is absolutely necessary that he should be thoroughly warm to insure quick recuperation. In case he is not thoroughly warmed in a minute or two after having been placed in the pack, then two to four hot water bottles should be placed at his feet, and around his legs, hips and body, quickly to restore the warmth of the body. After the patient remains in this wet sheet pack for a few minutes, a profuse perspiration is usually induced, and very material relief is experienced from all unpleasant symptoms connected with the disease. The pack should not continue for longer than one or two hours; but if at any moment the patient should show the least signs of growing weak from perspiring too freely the pack should be immediately removed. Complete details for the application of this pack are given in Chapter II of the present volume. Closely watch the pulse while the patient is in this pack; the reaction will cause the heart beat to be raised considerably.

Sometime during the afternoon, from four to six hours after having given the wet sheet pack, *Physcultopathic Treat-*

ment C could be given; though if there are signs of special weakness, Physcultopathic Treatment A would be better. There should be no other treatment. At night, however, if the patient has difficulty in sleeping, a local hot pack placed the full length of the spine will usually have a quieting influence and will add to the comfort of the patient. Should there be difficulty in breathing or should the pains in the chest become unpleasantly severe, then hot packs all around the front and back of chest region, and placed close up under armpits, would be of great value in bringing relief in a very short time.

Let us say that on the third day in this case we find that the patient has grown slightly weaker. The pulse is higher and the fever is slightly increased. By this time at least you could expect that the bowels would have begun to act freely from the oil, fruit juice, or salt and water, whichever you may have given for that purpose, and enemas would probably not be required. In case there has been no bowel activity, then a small enema, from a pint to a quart of water, would be valuable. A wet sheet pack could be given the same as on the previous day, though the patient would probably find Physcultopathic Treatment A more comforting than the more vigorous treatments.

The fourth day we find the patient still weaker; in fact, so weak that we have some doubt of his ability to recuperate from the influence of a cold sheet pack; therefore, instead of using this pack we will use an *Abdominal Pack* (this volume). If the fever still remains we would use this cold; if there is no fever we would give a hot abdominal pack, extending from the chest to the hips, and applied to the body as hot as could be borne by the patient. Indeed, it is a good plan frequently to place a hot water bottle over this abdominal pack. This particular remedy is inclined to accelerate greatly the activity of the alimentary canal and the elimination of poisons from the body. In the afternoon Physcultopathic Treatment D would be used, though if any discomfort is experienced from the movements prescribed in this the treatment would be con-

fined entirely to the placing of the hot towels on the spine. The free drinking of water would be encouraged right along, though of course water would not be forced upon the patient. If he is reminded of it he usually finds it pleasing and comforting. But we still refrain from giving him any food.

On the fifth day we find that the pulse is higher and weaker; the patient is apparently weaker; the fever has considerably abated; temperature about normal; patient complains of being cold. Symptoms of this kind should be understood as requiring immediate attention. In truth, a slight fever is of distinct advantage in nearly all acute ailments; therefore, the necessity of keeping up the bodily temperature can hardly be overestimated. The moment the patient shows the slightest feelings of discomfort produced by chilliness, you should try to give him immediate relief. In some cases bed covering alone will not be sufficient. Do not make the unwarranted and murderous mistake of closing the windows in order to secure warmth. After you have freely supplied the patient with additional covering and proper warmth is not secured, then you must supply it with hot water bottles, warm flatirons or other heated objects. If you have not the ordinary rubber bottle that is recommended, ordinary glass bottles, jugs, fruit jars, or anything that will hold hot water will advantageously serve the purpose. First place hot water bottles at the feet. If this is not sufficient, and there still seems to be a feeling of chilliness, others should be applied to the hips and waist. The best treatment at this stage of the disease would unquestionably be the hot abdominal pack, as prescribed on the previous day. It would help to maintain warmth and functional activity. In the afternoon the hot spinal pack should be again applied. I would not advise an enema of any kind at this stage, even if the bowels had not moved, unless it would not exceed perhaps a teacupful of water. The bowels have probably been quite well cleansed by the previous treatment by this time, and do not so much require this form of treatment, and besides, the bodily energies must be conserved. I believe that in some

instances where very full enemas are given to a very weak patient they are liable to hasten or directly cause death.

On the sixth day we find the pulse materially lowered and still weak. The temperature is slightly above normal, though the patient still requires considerable attention at times to avoid the sensation of chilliness. Remember that so far no food of any kind has been given, and none should now be permitted, unless there is a distinct craving upon the part of the patient for a few spoonfuls of milk. If this is relished, it may be given, but nothing beyond this. Even in this case, this little food is allowed only for the purpose of starting the digestive processes in the hope that they may assist in freeing the throat from the accumulation of mucus that often appears in this particular disease. In an acute disease where the lungs and the throat are not affected, no nourishment of any character would be allowed at this stage of the ailment, unless perhaps intensely craved by the patient. Under such circumstances it would be advisable to confine the nourishment to grape juice, or the juice of some other acid fruit. If the pains in the chest still continue, a combined abdominal and chest hot pack² should be employed, this pack to remain for two or three hours, and the heat to be maintained as well as possible by the use of hot water bottles. Towards evening Physcultopathic Treatment D should be given, which may be confined exclusively to the hot towel applied to the spine, if the movements are at all painful to the patient.

Now let us say that this patient continues along in very much the same condition, without any marked changes, for several days. In treating him at all times you would keep in mind the necessity for making him as comfortable as possible. The first essential to this comfort, as previously suggested, is a plentiful supply of fresh air; while next of importance is the maintenace of bodily warmth, a matter which should never for a moment be lost sight of. Next, the dry and parched throat which is usually associated with illnesses of this kind should be moistened with water at frequent intervals, and the continued free drinking of water should of course be encouraged.

Then the maintenance of proper activity of the bowels must not be neglected. After the first day or two of an illness of this kind the use of strong purgatives is sometimes dangerous. Many a patient has passed over from the effects of strong cathartics at this particular stage of an illness. Olive oil is perhaps the safest means of securing bowel activity at this time, though the oil should not be used unless absolutely necessary. It is better to mildly encourage bowel activity through small enemas each day, though in a case of this kind it is not wise to give more than one enema in a day, unless the patient is unusually uncomfortable on account of the need of activity of the bowels. Hot abdominal packs, however, as already stated, are usually a powerful stimulant to the alimentary canal and to bowel activity, and often when these are given regularly no other means are necessary to insure regularity. Each day, therefore, we would in the hypothetical case which I am considering advise the use of a hot abdominal pack for the purpose of insuring more satisfactory activity of the functional process of all the vital organs lying in this part of the body. We would also give the hot spinal pack each day for the purpose of spurring on the nerve centers to their particular and very important work. In other words, we would try, by every conceivable method, to make the bodily machine realize the necessity of performing its various duties. For, after all, an acute ailment is an effort upon the part of the body to right a wrong. And if you will give the body every assistance in the processes that are essential in order to bring about recovery, nothing more could possibly be accomplished.

The case that I have followed up to this particular point I have brought down to a greatly weakened condition, for the sake of illustration, indicating the particular treatment that should be given under such circumstances. It should be said, however, that if the methods which I have outlined are followed not one case out of a hundred would develop these serious symptoms; at least, not if the treatments are begun early in the course of the disease.

As the patient begins to recover it is necessary to use extra-

ordinary care to avoid making mistakes. Do not give any treatment from which the patient cannot recover quickly. The patient should always feel more comfortable after treatment; that is to say, the benefits should be apparent almost immediately. If he feels distinctly weaker, you should avoid repeating that particular treatment, giving something more mild in character. As the appetite begins to return, acid fruit juices can be given, especially the juice of the orange, pineapple, or grape, though in very small quantities and perhaps diluted with water. Milk of proper quality is by far the safest article of food to be used during convalescence after a serious illness. It should not be taken, however, unless it can be intensely enjoyed, and never a mouthful beyond what the patient desires. When the time comes that the patient wants some other food which is wholesome in every way, the desire may be granted, though it must be confined to a few mouthfuls. Keep distinctly in mind that over-feeding at this particular stage of recuperation will mean a setback in many instances, and recovery under such circumstances is frequently far more difficult than from the first attack. Therefore, it is always safer to under-feed than to go to the other extreme. Under-feeding at the worst can do no harm, further than the mere weakness that might result. By feeling your way step by step, very slowly increasing the nourishment, and giving foods that you know to be easily digested, the "getting well" process can be made to show a distinct gain day by day, and speedy recovery can be depended upon in every instance where the patient has been free from all of the doping and drugging that are ordinarily associated with the treatment of ailments of this character.

Bear in mind that the patient should be encouraged to get up and sit up whenever he so desires. If he feels fatigued after sitting up for a while he should lie down again. But if he is impressed with the idea that he should remain in bed after he has gained sufficient strength to sit up or walk about, the length of the illness will be materially increased. Let the patient get up and walk around whenever he desires, returning to bed whenever fatigue is noted. This advice is absolutely

safe in every detail, for after all it is the instincts of the patient himself that are to be the guide. When the patient moves about the vital activities are materially stimulated and recovery is greatly hastened, provided, of course, no exhaustion or severe fatigue is induced by the privilege.

Sometimes, even after the patient believes that he is fully recovered, very great care must be taken to avoid over-feeding. In fact, if the patient could be satisfied with the milk and fruit diet, or some one of the various Combination Milk Diets that appear in Chapter VI, he would recover far more quickly in most instances, and be assured of being on "safe ground" until he has secured absolutely normal health.

By following the above case through from day to day, the reader will have gained a fairly clear conception of the general method of procedure in a severe and persistent acute illness, though the methods referred to will usually cause the alarming symptoms to subside in one or two days, sometimes in a few hours. It will be understood that other forms of acute disease demand various modifications of the methods suggested in this case, these being determined both by the nature of the complaint itself and by the vitality and condition of the patient. There are some conditions, for instance, that require a great deal more of the hydrotherapeutic treatment, or which indeed need scarcely any other treatment, while there are others which above all things demand the re-establishment of a normal condition of the alimentary canal, through fasting, diet and other measures directly affecting this part. Wherever possible, an effort should be made to build up the vitality of the patient, spinal stimulation through mechanical Physcultopathy and hot applications being especially valuable in this way, but for the most part immediate and rapid elimination of wastes, poisons and foreign matter generally should be the key-note upon which treatment for acute disorders is based. In many instances there is not time to accomplish any material results in the building of vitality, and radical drugless methods should be adopted to help the body in its own natural efforts and processes for the purification of the blood.

In laying out the first general regimen for a patient with an acute ailment, who is bedfast and very weak, but whose temperature and pulse are normal, we would prescribe Physcultopathic Treatment A to be given very lightly sometime during the early morning. A hot spinal pack should be given about noon. If any abdominal disturbances are present or if there is lack of activity of the bowels, a hot abdominal pack would also be advised in evening. If there is apparently no discomfort in the abdominal region, and proper activity of the bowels is being maintained, this pack need not be given.

Should the pulse be high, or in other words, if it should be rapid and feeble, and the temperature low, this would indicate a very depleted condition, and Treatment A prescribed for the first thing in the morning, should give place to a hot spinal pack. In the afternoon a hot abdominal pack would be suggested. Hot water bottles should be used freely to maintain proper warmth of the patient, being placed at the feet, hips and legs if needed.

If the pulse is low and the temperature normal, which would naturally indicate more vitality, unless the patient is exceptionally weak, Physcultopathic Treatment A should be given in the morning, followed very soon thereafter by a hot spinal pack; a hot abdominal pack to be given toward evening.

In the case of a low pulse, and low temperature, you have a condition which might be termed unusually dangerous, though in most instances the application of a hot spinal pack, or even a hot abdominal pack, would bring the temperature to normal or above; as a rule it will bring it above normal with a higher pulse, as the high pulse is in nearly all cases associated with a high temperature. In cases of this kind I would not advise the use of any Physcultopathic movements, but would suggest a hot spinal pack in the morning, and a hot abdominal pack in the evening. In some instances it might be advisable to use a hot sitz bath instead of a hot abdominal pack, though of course the patient would have to be lifted from the bed and placed in the bath; he should remain there but a very short time. A hot sitz bath is really a marvelous stimulant when

the vital activities are at low ebb. In some instances, however, a hot sitz bath will be too strenuous.

When the pulse is high and the temperature normal, I would suggest Physcultopathic Treatment A, to be given very lightly, to be followed by a hot spinal pack. A cold abdominal pack to be taken before retiring, provided the patient is quite warm. If there is evidence of chilliness then a hot abdominal pack should be given. Should the cold abdominal pack be used and the patient should not recuperate, then hot water bottles should quickly be placed at the feet and legs to bring about satisfactory warmth.

When the pulse is high and the temperature high, and the patient is in a weakened condition a cold abdominal pack could be used in the morning for an hour or two, and also in the evening.

A wet sheet pack is sometimes advisable in conditions of this kind, though in case a wet sheet pack is used the patient could be allowed to remain in it an hour or two, and no additional treatment should be given during that day.

As a rule, however, it would be better to use a cold abdominal pack in the morning, and the same treatment in the evening. In high temperatures always use the greatest care to avoid too much covering. One can reduce the temperature of the body by an air bath, just as easily as with a cold pack, or a cold water bath, and the air bath under such circumstances is of distinct advantage; therefore, when the patient is in a high fever, remove as many of the clothes as he might desire in order to secure comfort; if he wants all the clothing removed, and he is still comfortable, you can even then depend upon the feelings of the patient for a guide, and you can rest assured that the removal of all clothing under such circumstances could not be other than beneficial.

As in the illustrative cases we have cited, so in practically all forms of acute disease, the condition of the alimentary canal is one of the first things to be considered. In practically all cases there is loss of appetite and the stomach is utterly unable to digest food. Feeding under such circumstances is

only placing a tremendous handicap upon the vital energy of the body, and fasting is therefore advised in all serious cases. Sometimes a diet restricted to pure fruit-juices will be acceptable, but if they are not keenly relished, an absolute fast is better. For cleansing the stomach and intestines the very free drinking of water should be persisted in, though there is another reason for this in supplying the fluids of the body. Water is the great, universal solvent and of inestimable value as an aid in eliminating wastes and poisons through both kidneys and skin. In many cases, the use of hot water for drinking is more effective, being more rapidly assimilated and having a more rapidly cleansing influence. As a rule, however,, the question of drinking hot or cold water should be determined by the instinct of the patient. If cold is more gratifying, and can be consumed in greater quantities, then it is usually to be preferred. If there is vomiting or a tendency to vomit, this should by all means be encouraged with the use of emetics, in the proportion of a single teaspoonful of salt to a glass of lukewarm water, though if this is inconvenient, it would probably do just as well to drink as much lukewarm water as possible and then to induce vomiting by tickling the throat with a finger. Vomiting means that there is something in the stomach which should be got rid of, and any help in this direction will assist in the process of overcoming the diseased conditions.

Though I have already referred to the need for using an enema when constipation is present, it should be known that diarrhœa often calls for the same treatment as a means of more effectually cleansing the intestinal tract. Diarrhœa is a heroic effort upon the part of the organism to get rid of hostile or accumulated waste matter, and the enema will here give great assistance to this natural self-curative action of the system. If the patient is very weak he should not be allowed to become too much exhausted by this form of treatment, but in some serious disorders of the alimentary tract it is necessary to give a daily enema to accomplish the cleansing of these parts in the most thorough manner. But the necessity for elimina-

tion is so urgent in nearly all acute disorders that this method of flushing the internal body is usually to be recommended even when there is no special constipation or diarrhœa to direct attention to its need.

In short, the bowels should be given early attention in all attacks of disease. The free use of olive oil may be recommended, and acid fruit juices may sometimes be given with great advantage for the sake of their mild laxative influence. Plain water taken internally in fairly large amounts is sometimes an effective cleanser of the intestines, as well as of the stomach. If fever exists the water may be fairly cool but otherwise it may be cool, warm, or hot. Two or three glasses at a time will not be long retained in the stomach but will pass the contents and secretions of this organ into the intestines; and if another two or three glasses are taken, say within fifteen or twenty minutes, and possibly repeated once or twice again, the bowels will expel their contents within a short time, in many cases. If a little salt and lemon juice are added to the water the cleansing effect will be greater, especially if the water in this case is hot.

If the kidneys prove to be inactive a full hot enema (115 degrees F.) will be effective in stimulating their free action, though in any serious disorders of the kidneys, the full hot bath is invaluable. Not only will it give relief to the overstrained kidneys by doing much of their work for them, but it will exert a powerful eliminative influence generally.

Many complaints may be checked in the first few hours by proper methods, and the treatment of sudden chills or fever is so simple that there is no excuse in a large number of cases for prolonged illness. The conditions and instincts of the patient will usually indicate the proper treatment with unerring fidelity to his welfare. If he is suffering from chills, he should be made warm as soon as possible, internally and externally. Piling on heavy coverings usually has no effect, for the circulation itself must be influenced, in addition to the radiation of heat from such warm objects or liquids as may be used. Hot drinks should be given, either hot water or hot

weak lemonade, and hot water bottles should be applied to the feet, with others placed about the legs, hips and sides. A hot foot bath, with plenty of warm blankets wrapped around, will be effective when the patient is able to sit up, though in such a case a very little exercise will go far in helping to arouse the circulation. In case of fever the drinking of cold water in copious quantities is advised, combined with cold water affusions, douches, cold towel or sponge baths, cold packs and other hydrotherapeutic measures, and even cool enemas in extreme cases may be resorted to. In short, the temperature of the body may be pretty well controlled through the intelligent use of hydrotherapy. Ice packs are valuable in some cases, but they are rather depressing in many instances, and for most purposes cold water packs are more satisfactory.

Hydrotherapy is especially valuable as a means of furthering elimination in nearly all acute ailments. It is usually necessary to accelerate the activity of the skin to a very marked degree, and anything which induces in a natural way a profuse perspiration may be recommended. In the case of an attack of a "bad cold," or la grippe, or any similar complaint, a steam or hot air cabinet bath, continued from fifteen minutes to a half hour, and followed by a quick cold sponge bath or a cold douche, will in most cases succeed in diverting the attack, when combined with due attention to the alimentary canal in the form of fasting, water drinking and enemas. This remedy is of exceptional value in all cases where the vitality of the patient may endure it without difficulty. The full hot bath is an active means of elimination, but this also may not be suited to some cases, where the heart is weak, or where it seems too depressing. Therefore the cold wet sheet pack is perhaps the most satisfactory of all these various measures, as a means of powerful and active elimination that is almost universally available. However, in those cases in which the patient is so weak that his recuperative powers do not seem capable of responding to the cold wet sheet pack, or even a partial pack like a chest and abdominal pack, then the hot blanket will accomplish the same results without jeopardizing his comfort.

The application of heat to the feet in connection with the cold wet sheet pack will usually insure perfect recuperation when it is doubtful.

In connection with these measures for accomplishing the elimination of the foreign matter, accumulated wastes or poisons which are the cause of the disease, local packs of both hot and cold are useful by way of controlling the circulation locally and for the purpose of relieving pain. Hot fomentations are best in nearly all cases for relieving pain, though sometimes cold will be found more soothing, while for actively accelerating the circulation the alternate application of hot and cold compresses or water is most effective of all. Where there is congestion in the head, relief may be secured by applying cold packs to the head and heat to the feet, thereby drawing the blood to the feet and away from the head. It is true that these facts have all been made clear in my discussion of Hydrotherapy and in other places, but it is necessary that they be thoroughly understood here in connection with the practical application of these various measures in the treatment of disease.

What I have said in regard to the advantage of moderate activity upon the part of the patient in connection with the case considered applies with equal force to all forms of acute disease. When such activity is attended with discomfort or pain, it should not be attempted. The instincts of the patient should govern in this respect. If he does not feel like going to bed he certainly should not be persuaded to do so. But if he feels much better reclining, then he should not try to be up and about. It often happens that the best plan is to be up and about only a part of the time each day.

The necessity for pure air is absolutely imperative in time of sickness, if possible being even more important and urgent than under ordinary circumstances. It would seem to be so self-evident as to require no mention here, but the lamentable fact is that in the past the sick room has been the last place in the world where one could find air fit to breathe. Sickness was regarded as a signal to close the windows and lower the shades,

whereas it should be the occasion for opening up the windows or if possible taking the patient out of doors entirely. When the patient is in a critical condition this one matter of fresh air is often sufficient to decide the question of life or death. Light and cheerful surroundings are also important. It is true that there are some fevers in which a bright light places a strain upon the eyes which is likely to prove injurious, but the instinct of the patient will call for a subdued light in cases of this kind. And in practically all cases light and air should go together in providing an environment favorable to the quickest possible recovery.

In short, our aim in the treatment of acute disease should be to give as much assistance as possible to the natural processes and self-curative efforts of the body itself. Advocates of drug treatment often claim that this is all that they attempt to accomplish, oblivious of the fact that drugs can only hinder and never help in this direction. But although elimination should be the keynote upon which treatment is based in acute disorders, thereby accomplishing the purification of the blood as rapidly as possible, any effective means of increasing the vitality of the body should be adopted if only to further the processes of elimination. It is true that in a sudden attack of some violent complaint there is no time to accomplish much in this direction, but even in such cases the practice of mechanical Physcultopathy for stimulating the spine will be of great assistance. It is useless to strive to build vitality under such circumstances by forced feeding, as is commonly attempted in connection with medical treatment. "sick men and women have been sent to untimely and made by murderous methods. But by stimulating out of strength by energizing the vital forces of the body the Tonic, methods which I have given in detail in Chapter III of this volume, the patient will be given invaluable assistance in his fight against the disease. As suggested in the hypothetical case which I have just taken up, benefit will be secured from the simple use of the hot towel applied to the spine when the patient is too weak to endure extensive move-

ments. When able to receive and respond to the more vigorous forms of Physcultopathic treatment, however, these more energetic movements should certainly be used.

TREATING CHRONIC DISEASES.—The successful treatment of a chronic disease in nearly every case depends largely upon building increased vitality. The existence of symptoms of a disease that have continued for a prolonged period indicates either a defect in bodily functioning, or else certain depleting habits which produce these symptoms as a means of ridding the body of various foreign elements that accumulate because of the faults referred to. Considering these conditions, therefore, the treatment of various chronic diseases, regardless of what symptoms may be manifested, are to a large extent similar, for, as already said, they all depend on one thing—a particular change in the bodily condition, and that is an increase in the strength of the vital organism.

Naturally, we give our attention, first of all, to accelerating the activities of those organs that carry from the body the poisons or foreign elements which are the usual cause of the symptoms of the disease. In other words, if one has an inflammation, a soreness or pain in some part of the body that has become chronic in character, we might say that in practically every case this pain or soreness or inflammation is the physiological manifestation of a depleted or impure condition of the life building fluid—the blood. Though local applications or local treatment will be of aid in helping one to rid himself of symptoms of this character, this sort of treatment is of minor importance compared to the efforts that can be made to right the wrong at its very foundation; in other words, if the blood is at fault the life stream must be purified and to contain those elements that not only build superior strength but carry away the effete matter that naturally accumulates in the tissues of the body.

For instance, the average physician will tell you that rheumatism is caused by uric acid. It is immaterial whether or not this is the particular nature of the impurity that is the cause of this difficulty; we know that there is something wrong

in the blood stream; we know that certain foreign elements have accumulated therein and that the functional processes that make the blood are at fault. Therefore, whether you are treating chronic rheumatism or any other chronic manifestation, the general treatment is to a large extent similar. For the entire object to be kept in view is to increase the vitality of the entire organism; to adopt a régime, dietetically and otherwise, that will add to the strength of the various special organs and of the constitution as a whole. Through a process of this kind, slowly but surely the patient will find an increase in his vitality, an improvement in his digestion and a general change for the better in all parts of the body.

One of the first objects to be kept in view in this building up process is to secure proper activity of the alimentary canal, not through the aid of some cathartic, or other "dope," but through measures that will produce what we would term a normal activity of those important functions. That is one reason why we first of all advise a fast when one is starting on a regimen for the treatment of a chronic complaint. This gives the alimentary canal a chance to cleanse itself. It gives the various organs connected with the blood making process a complete rest, and thereafter they take up their work with renewed zest. The stomach is keenly aroused to the need for nourishment, and when proper food is furnished after a rest of this kind blood of the purest quality is distributed to the depleted tissues through the entire body. A better quality of building material is furnished to all parts. The blood not only furnishes improved nourishment because it contains more life-making elements, but it is also capable, on account of its added vitality, of carrying the dead cells and the worn-out tissues out of the body more effectively.

To give my readers an opportunity to understand as fully as possible the general principles of the methods which we can best use in the treatment of these complaints, I will, for instance, take up a case of vital depletion, considering the various manifestations that may appear in this complaint, and advising the treatment that should be applied in effecting a cure.

As a means of guiding our readers more carefully, I will select several cases of varying strength, and indicate the difference in the régime to be adapted to the needs of each patient.

Suppose, for instance, that we take a patient suffering with vital depletion who is emaciated, a chronic, bedfast invalid; his pulse is feeble; temperature slightly above normal at latter part of every day, indicating the presence of some fever. In a case of this kind the complete recovery of the patient could not be definitely promised by any means, though I have always followed the policy expressed in the words, "While there is life there is hope," and even in cases of this kind, remarkable changes have frequently been made in a very short time. In this instance I would give the following advice: First, Fast-ing Regimen No. 2, to be continued from two to three days; patient to have hot water whenever desired, flavored with lemon juice or grape juice if preferred. Regular instructions in Breaking Fast Regimen, No. 16, to be followed, including the Milk Diet suggested thereafter. The daily general regimen to be as follows: Dry friction bath on waking in the morning; hot abdominal pack at 11 or 12 o'clock; Physcul-topathic Treatment D at 5 or 6 o'clock, though as the patient gains in strength, more vigorous treatment is to be used—Physcultopathic Treatments B or C, instead of D, and the patient should then be encouraged in every way to get up, walk about, and take some special exercise on his own account, as strength is required.

Now let us assume that we have another case of vital depletion, though instead of being confined to bed this patient is able to walk around; that identically the same symptoms are indicated; that is, the patient is emaciated; pulse quick and feeble; fever occasionally. Under such circumstances the greater strength of the patient would indicate the possession of more vital energy. There would be little or no change in the Dietetic Regimen; the fast instead of being two or three days might be increased to four or five days; and instead of having an assistant give him the dry friction bath, he could take it himself and be improved by it; instead of taking Phys-

cultopathic Treatment D he could be given Treatment B or C, and as strength is gained this could be replaced by Physcultopathic Treatment H.

Let us suppose that we have the same trouble to deal with, and the pulse instead of being quick and feeble is full and strong; temperature normal; the weight still below normal. Such symptoms would indicate a decidedly better general vital condition; the fast could therefore be extended a day or two, and more vigorous treatment in general could be employed. Long walks would be of inestimable value, gradually increasing the length of the walk each day.

Now we will say that a patient is suffering with the same complaint, but is normal in weight; that is, weighing about what he would in good health. This would indicate, at least, that the disease had not seriously affected the assimilative organs, and would be a favorable indication that the patient was in a condition to receive with benefit a still more vigorous regimen. We will find in such a patient that the temperature, respiration and pulse are normal. In this case I would advise Fasting Regimen No. 1, for one day, followed by Fasting Regimen No. 2, for four days, followed by Fasting Regimen No. 3 for two days; then instructions in Breaking Fast No. 17, the Milk Diet to be adhered to if possible, in accordance with instructions given therein. The regimen for the general treatment, to be self-applied, would be, Physcultopathic Treatment H on waking in the morning, followed by a dry friction bath; after this bath, he should place the hands in cold water and wet the entire body in this manner, after which drying thoroughly with a rough towel. Sometime during the day patient should take a long walk, continuing until slightly fatigued. In the evening before retiring Physcultopathic Treatment D would be especially valuable, though if an assistant is not at hand, then Physcultopathic Treatment K should be used. As the patient continues to improve in strength, Physcultopathic Treatment L could replace Treatment K.

Still with this same complaint to deal with, let us take a patient whose pulse and temperature appear to be normal,

but who is overweight. When one who is carrying around surplus tissue is suffering with anemia, which is really one form of vital depletion, the blood does not contain the vitality which is essential to properly nourish the body. If a patient of this type is very weak, practically the same regimen that has been prescribed for an emaciated patient could be advised, at least for a time. But if he is strong, the same regimen that was advised for a patient in normal weight could be followed. The only difference in the treatment of the patient who is overweight would be, that if he seemed to be increasing in strength while continuing the fast its duration could be materially increased. Excess weight is nothing more than stored nourishment, though in some cases when the vitality is very low, the body does not seem to be able to adapt itself to the change from the usual source from which it secures nourishment. Under such circumstances, naturally, the fast would better be short; in almost every instance, however, where one carrying a surplus amount of tissue follows the fasting plan with confidence, he will notice a gradual improvement in strength day by day. This may not always be noticeable in additional energy within the body; in other words, he may not in all instances feel stronger, but an actual test of strength would indicate an increase in muscular vigor. It is an exceedingly good plan when one is overweight to test his strength when beginning the fasting regimen, by putting up a weight over his head or in some other manner in which there is no possibility of strain, and to test his strength again every two or three days while on the fast. The increase in strength that the fleshy person will experience while fasting will nearly always be the means of greatly encouraging him to continue the treatment, and from this viewpoint alone he will be greatly benefited, for the mental attitude is of even more importance while following the fast than ordinarily. Therefore, if the patient is overweight and weak, the same regimen recommended for an emaciated person should be adopted with the exception of the Milk Diet. The diet indicated in *Breaking Fast Regimen No. 16* should be adhered to. If he is

strong, then the general regimen advised for one of normal weight should be adhered to.

It will thus be seen that there is more opportunity for the use of Physcultopathic Treatments in connection with chronic ailments than with acute disorders, for in the latter there is sometimes little time in which to accomplish results. Wherever possible, however, one should not fail to take advantage of these methods of spinal stimulation either in acute or chronic cases. In chronic cases it is not always necessary to make use of radical eliminative measures, because the same thing may be accomplished through the building of increased vitality. The importance of building up constitutional strength and nerve energy cannot be over-estimated. Perfect elimination is not any the less important in chronic disease, and the increased vitality to be gained through our special methods will also enable the depurating organs of the body to perform their work much more effectually.

The sufferer from chronic disease, therefore, absolutely must *build up*! Any form of treatment, no matter how advantageous it may prove to be in some respects, which does not involve this increase in vital strength and an all-around improvement in the general health of the system, must prove ineffectual to just that extent.

In Chapter VI, of this volume, we describe treatments adaptable to a large number of cases. If you are treating a case, the condition of which varies from day to day, the treatment should vary in accordance with the instructions given in these various regimens. For example, suppose you have a patient confined to his bed, temperature and pulse normal. Under Vitality Building Regimen No. 6 you will find detailed instructions that should be followed in this particular case.

But suppose the following day the pulse should be greatly accelerated and the temperature high; you can readily understand that the treatment under these two conditions would vary materially and when the new symptoms appear you should make the changes advised in the treatment.

CHAPTER VI.

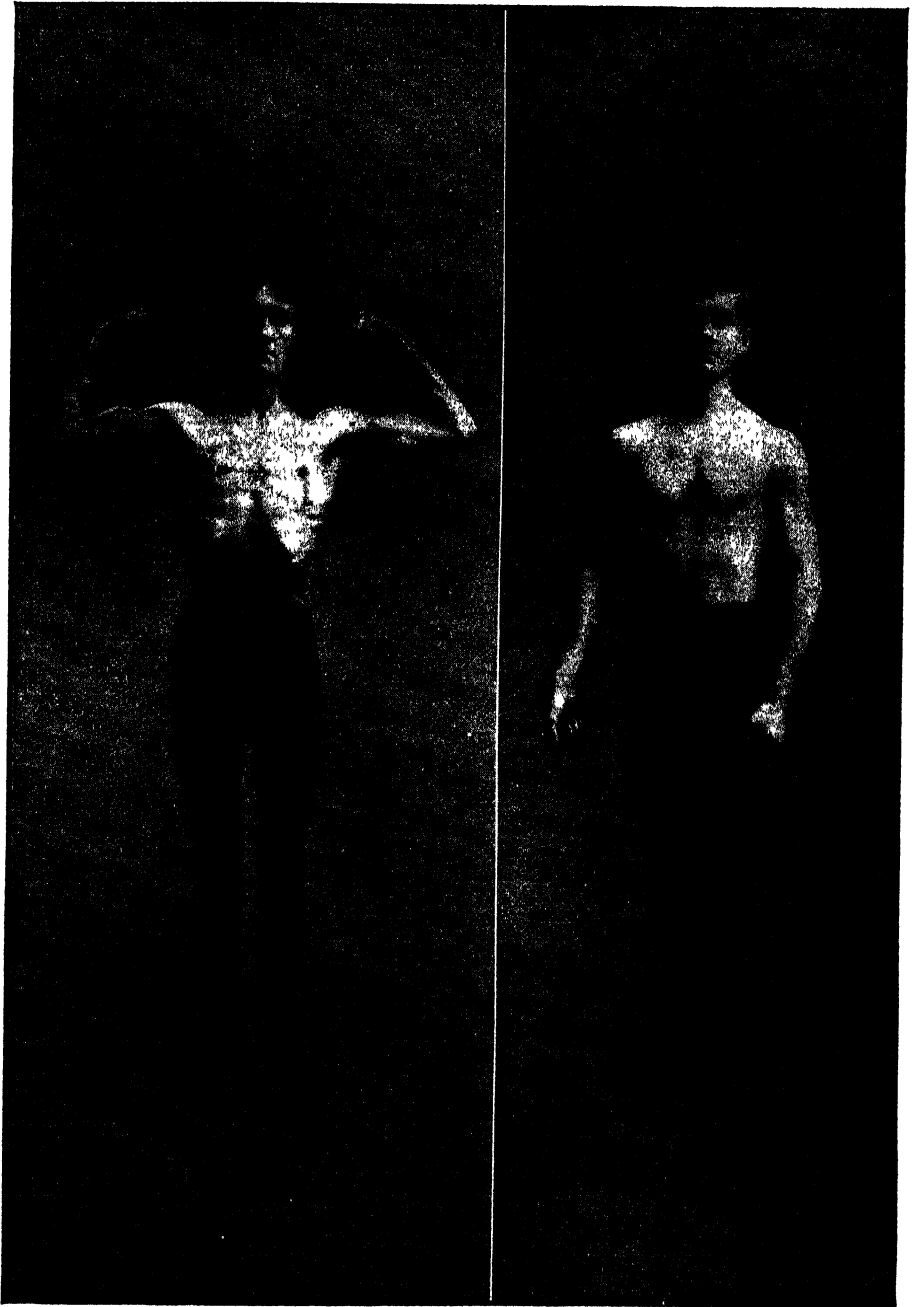
FASTING AND DIETETIC REGIMENS.

FASTING REGIMENS.

FASTING REGIMEN No. 1.—Consists of entire abstinence from nourishment of all kinds, either liquid or solid, and also abstinence from water. The period of this fast, as a rule, should last from one to four days. This method of fasting is only required in exceptional cases. The purpose of abstaining from water is to try to gain what one might term a natural thirst. Many people in their desire to drink a certain amount of water which they feel is essential, get into the habit of drinking water as a duty—in some cases almost as they would take medicine. This is a decided mistake, though there are some exceptions to the rule. A water fast is recommended for the purpose of properly adjusting the liquid supply of the body and developing a natural thirst. It is especially advised in cases of dropsy where there is a large accumulation of liquids in the system.

FASTING REGIMEN No. 2.—This consists of complete abstinence from all nourishment, liquid or solid, with the drinking of water merely when the definite desire for it is noted. This is the fast that is usually recommended in ordinary cases. It should last from three to thirty days, depending largely upon the amount of vitality and surplus flesh possessed by the patient. If the first fast does not bring all the desired results, another may be taken after the patient has regained the weight lost during the first, and so on until all disease is eliminated, and the body restored to a normal healthy condition.

FASTING REGIMEN No. 3.—This is exactly the same as No. 2, with the exception that the patient is particularly requested to drink large quantities of water. By large quantities I mean on an average of from half a pint to a pint every hour during the day.



On the left is shown a young man who has just completed a fourteen-day fast, with a reduction in weight of twenty-three pounds. On the right is the same young man thirty-five days after breaking the fast, showing physical improvement after abstinence from food.

FASTING REGIMEN No. 4.—This is what is termed a long fast, or “fasting to a finish.” In this particular method of fasting one should drink water whenever there is thirst for it. As a rule when a long fast is needed, after a week or ten days the tongue becomes thickly coated and the breath exceedingly foul, showing the extreme activity of the purifying processes. This fast should be continued until the tongue is clean, and until there is a distinct desire for some particular article of food that is known to be wholesome in character, as fully described earlier in these pages.

FASTING REGIMEN No. 5.—This is the same as No. 4, with the exception that the patient is requested to drink very freely of water, one-half pint to a pint every hour.

FASTING REGIMEN No. 6.—This is the same as No. 2 except that large quantities of water, slightly acidulated with lemon juice and slightly salted, should be taken during the day. A quart of hot water with the juice of one lemon and half a teaspoonful (or less) of salt should be taken two or three times a day, with an occasional glass of water during the day between these quarts. The water should be hot but not so hot as to require sipping—it should be taken fairly quickly.

FASTING REGIMEN No. 7.—This method of fasting consists of a series of short fasts gradually increasing in length. These fasts should really be continued until all symptoms of the disease have disappeared.

Fast one meal, after which eat two meals. Fast one day, after which eat for two days. Fast two days after which eat for four days. Fast three days after which eat for six days. Fast four days after which eat for eight days. Fast five days after which eat for fifteen days. Continue this process, making your eating periods three times as long as your fasting periods until the desired results have been secured.

To a certain extent this fasting regimen is similar in its influence to the long fast, provided the greatest possible care is taken to avoid over-eating during the eating periods. One should either set out at one meal the exact quantity of food to be taken, and under no circumstances allow himself to take

more than this quantity, or else he should live on a milk-and-fruit diet, or a milk diet, on which he can as a rule satisfy his appetite without injury.

PARTIAL FASTING REGIMENS.

In many cases it is necessary to prescribe what we term a partial fast. When the bodily energies are very greatly depleted, and apparently a fast is necessary to give the digestive organs the necessary strength to make the proper kind of blood, a partial fast is sometimes recommended. As a rule the best results are secured from this form of fast if a small quantity of fruit-juice is taken in preference to any other food. This requires little or no digestive energy, and yet it supplies a great deal of essential energy to the body; in fact, after one has fasted several days and then finds that his energies are so depleted that he cannot continue the fast any longer, a wine-glass of fruit-juice, such as that of the apple or the **grape**, will produce a very marked and beneficial change. Naturally these partial fasting regimens could be extended indefinitely; I am, however, recommending those that have proved to be most valuable in my actual experience with thousands of patients.

PARTIAL FASTING REGIMEN No. 8.—This consists of one-fourth of a pint of fruit-juice secured from apples, grapes, or any acid fruit, three times a day. This fruit-juice should not be taken hurriedly as some drink water, but should be sipped slowly, taking one or two minutes to drink each glass. Water may be taken as desired.

PARTIAL FASTING REGIMEN No. 9.—This allows three meals each day, consisting of from two to four ounces of acid fruit at each meal. Any kind of acid fruit, whichever is the most palatable, can be used; the most desirable are apples, pears, peaches, grapes, oranges, grape-fruit, or any fruits of similar character. Strawberries and blackberries form another type of this fruit. Water may be taken in accordance with the desire.

PARTIAL FASTING REGIMEN No. 10.—This consists of two

meals a day of from three to six ounces of acid fruit and sweet fruits combined, half and half. For instance, dates are seeded and cut up, and apples are cut up, and the two are mixed together. Almost all acid and sweet fruits will combine satisfactorily in this manner. If one does not especially dislike olive oil mixed with this combination, it will add considerably to its appetizing qualities. Water may be taken as desired.

PARTIAL FASTING REGIMEN No. 11.—This consists of one glass of sweet milk taken morning and evening. Drink water as desired.

PARTIAL FASTING REGIMEN No. 12.—This consists of one glass of skimmed milk, morning, noon and night. Drink water as desired.

PARTIAL FASTING REGIMEN No. 13.—This consists of one glass of sumik morning, noon and night. Drink water as desired.

PARTIAL FASTING REGIMEN No. 14.—This consists of one glass of buttermilk morning, noon and night. Drink water as desired.

PARTIAL FASTING REGIMEN No. 15.—This consists of one moderate slice of dry whole-wheat bread or zwieback, twice a day, thoroughly masticated. Drink water as desired.

INSTRUCTIONS FOR BREAKING FASTS.

The first requirement in order to secure satisfactory benefit from a long fast is the following out of a dietetic regimen thereafter which will insure against over-eating or the use of unwholesome foods. Over-eating is quite the usual fault after breaking a fast, and in many instances this more than counterbalances the beneficial influences of the fast. In fact, prolonged abstinence from food, followed by heavy eating will often be productive of such injury that it will more than counterbalance the benefit one may have secured from a fast. I, therefore, present various dietetic regimens for breaking fasts of different duration. When you find it impossible to secure the foods that I recommend similar quantities of other

foods that you may know to be wholesome may be substituted, though the food you select should be as nearly as possible like that which I have prescribed. The only exception to this would be in cases where acid fruit seems to "turn the stomach," producing symptoms of nausea; in this case a small quantity of sweet fruit, such as dates or raisins, should be used. Honey is a good substitute if absolutely pure. Commercial sugar or molasses in any form is dangerous and should not be used unless one possesses very strong digestive powers. You must remember that a long fast materially reduces the size of the stomach, while a short fast of from one to four days frequently makes little or no change in it. This contraction of the stomach makes it important that one avoid the inclination to over-eat that often appears within two or three days after having broken a fast.

BREAKING-FAST REGIMEN No. 16.—This regimen is to be used when breaking a fast of from one to five days. It is highly advantageous to go on the exclusive milk diet after a fast of this kind, especially if your assimilation is poor. The diet may be taken as follows: First day, three meals of acid fruit five hours apart, consisting of one or two oranges or apples, or a similar quantity of other acid fruits; second day, half pint of milk every hour; third day, half pint of milk every three-quarters of an hour; fourth day, half pint of milk every half hour; fifth day and thereafter, one-half to three-quarters of a pint of milk in accordance with the desire, endeavoring gradually to increase the total amount taken during each day until your capacity has been reached. If for any reason a milk diet cannot be used, then on the first day after breaking fast begin a three-meals-a-day regimen, the meals to be at least five hours apart. First meal, one orange and two dates or figs. Second meal, one apple and two figs and one-half pint of milk. Third meal, combined sweet and acid fruit according to taste; raisins and apples, or peaches and dates, or similar combinations, to a quantity equal to a half pint or pint. Drink one-half to one pint of warm milk with this meal. For two days thereafter upon

arising and just before retiring, drink from a pint to a quart of milk as hot as can be comfortably taken, and take one meal in the middle of the day, eating fairly heartily, though not stuffing. Following this you can work into your ordinary dietetic regimen without running any risk, provided reasonable care is used to avoid over-eating.

BREAKING-FAST REGIMEN No. 17.—This diet to be used for breaking a fast of from six to ten days' duration. The first day after the fast eat three meals consisting of one orange only, taking simply the juice of the orange; a small apple can be used instead, if it is chewed very thoroughly; or a quarter of a pint of grape-juice, or apple-juice can be taken at each meal. The second day, the quantity of acid fruit that has been suggested on the previous day should be doubled, though the pulp of the orange, if this fruit be used, can be chewed and swallowed, if desired. It would be advisable thereafter to adopt a regular milk diet as follows: The first day of the milk diet, one-half pint of milk every two hours; second day, one-half pint of milk every three-quarters of an hour; third day, one-half pint of milk every half hour; fourth day and thereafter, one-half to three-quarters of a pint of milk every half hour in accordance with the desire, endeavoring gradually to increase the amount until the capacity of the patient has been reached.

If you do not care to adopt the milk diet, then on the third day take at first meal one glass of warm milk, together with a small quantity of sweet and acid fruits. One apple and half a dozen dates make a good combination. Second meal, two glasses of warm milk and sweet and acid fruit. Third meal, three glasses of warm milk can be taken if desired. On the fourth day immediately upon arising take some acid fruit, provided it is appetizing—an orange preferred. If the tongue is coated and the mouth has an unpleasant taste, lemon is the best fruit for the occasion, if it is not productive of discomfort. Following this acid fruit, slowly sip from three to five glasses of milk as warm as can be comfortably taken. Take a similar meal at noon, though, if desired, nuts

or some other uncooked food, may be added to the fruit suggested. Repeat the same meal in the evening. Fifth day, acid fruit on arising, provided it is appetizing; warm milk to the extent of the desire. At noon take a meal of food that previous experience has indicated would agree with you though do not use milk with the meal, and drink very warm milk to the extent of your desire just before retiring at night.

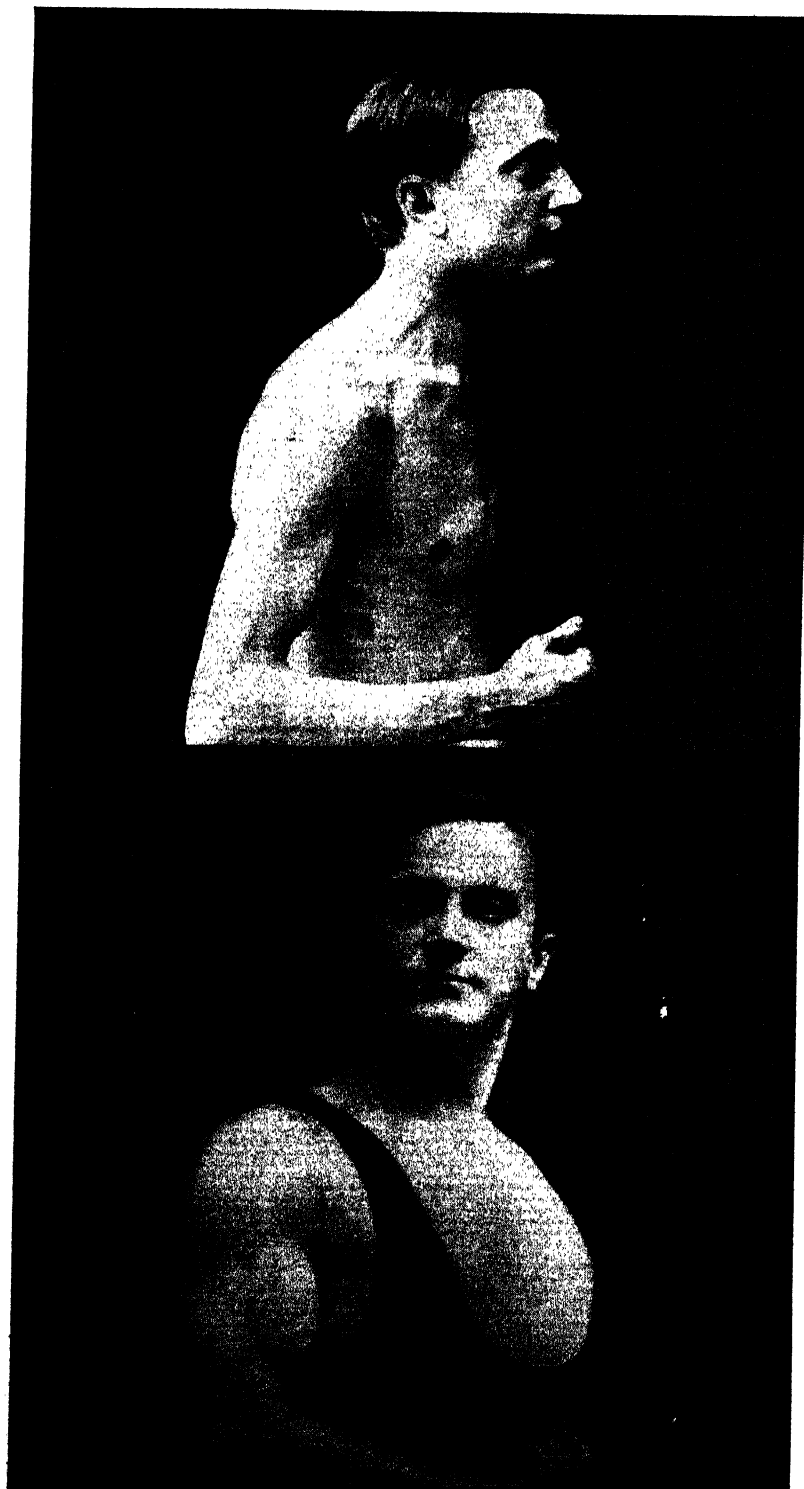
Following this an ordinary dietetic regimen can be adhered to without danger, provided care is taken to avoid stuffing.

BREAKING-FAST REGIMEN NO. 18.—This regimen is to be used for breaking a fast ranging from eleven to twenty days. The first day take three meals consisting of the juice of an orange or grape-fruit. On the second day double the quantity of fruit taken, eating the pulp of the orange or grape-fruit if this is desired. On the third day, take exactly the same meals, adding one glass of milk, warm or cold, at each meal. Thereafter you can begin on the regular milk diet as follows: On the first day of the milk diet take one-half pint of milk every two hours; on the second day, one-half pint of milk every hour; on the third day, one-half pint of milk every half hour; on the fourth day and thereafter, one-half to three-quarters of a pint of milk every half hour, in accordance with the desire, endeavoring gradually to increase the total amount taken until the capacity of the patient has been reached. Should you decide not to use a milk diet, then on the fourth day two glasses of milk at each meal, and a similar quantity of acid fruit as used on the previous day may be selected; if preferred, apples or peaches may be used instead of the orange or grape-fruit. On the fifth day, drink a half pint of warm milk as often as desired until 12 o'clock; some acid fruit may be taken upon arising if it is especially appetizing, or if the tongue is coated and the mouth has an unpleasant taste. In the evening at five or six o'clock you may take a full meal of foods that previous experience has indicated to you would be fairly easy to digest, being careful to avoid over-eating. No milk is used with this meal but soup will be found very acceptable. On the sixth day, after taking some acid fruits, if

desired, drink from two to four glasses of warm milk on arising. Take a hot meal at noon of foods that you especially crave; take another meal in the evening, between five and six, which should be similar to the meal used on the previous day. A similar regimen can be followed for two or three days, after which you may resume an ordinary healthful diet.

BREAKING-FAST REGIMEN No. 19.—For breaking a fast that has extended over twenty days or more, take on the first day three meals of acid fruit only, the first meal to be a quarter of a pint of fruit-juice made from some acid fruit. Fresh fruit is usually preferable to juices that have been bottled; for instance, the juice of a fresh orange or grapefruit is the best to use. The second day take three meals of double the quantity of fruit-juice. The third day take three meals, each consisting of one or two oranges, the pulp of the orange to be eaten if desired. The fourth day, if you are desirous of going on the milk diet, take some acid fruit on arising, and take a quarter of a pint of milk every two hours while awake. The fifth day take a half pint of milk every two hours; the sixth day, half a pint of milk every hour; the seventh day, half pint of milk every three-quarters of an hour; the eighth day, half pint of milk every half hour; the ninth day and thereafter, half to three-quarters of a pint of milk in accordance with the desire, endeavoring gradually to increase the amount until your capacity has been reached.

In case you should not desire to adopt the milk diet, as suggested, on the fifth day take three meals consisting of acid and sweet fruit and one glass of warm milk. On the sixth day take three meals consisting of two glasses of sweet milk and acid fruit to the extent of your desires. On the seventh day, on arising, take one meal of warm milk and acid fruits, and a regular meal at noon of such foods as previous experience has shown will agree with you; and a third meal of acid fruits and milk. On the eighth day take a regular breakfast, in which you can include some of the ordinary foods to which you are accustomed, though the meal



Prof. Emilio Gallardo, of New York, before (upper picture) and after

should be finished with acid fruits. At noon, eat a regular meal, being careful not to over-eat. The evening meal should consist of warm milk and acid and sweet fruits. Following this you can go on your regular regimen, though you would probably find it to your advantage if you were to take acid fruit and milk for your morning and evening meals, and eat your regular meal at noon for a considerable time thereafter. This diet will materially assist you in getting very splendid results from the fast.

LIMITED DIETS.

In the diets that follow I have endeavored to limit the quantity of food eaten. Many chronic complaints are caused largely through over-eating as a result of which an abnormal appetite is created. There are two methods to remedy the symptoms connected with the unpleasant manifestation; one is to fast entirely and the other is to limit the food to a certain amount. I must admit, as a rule, when there are no anxious relatives or friends about to annoy one, that fasting outright is easier than limiting the amount of food, especially if one should attempt to limit the food eaten to what might be termed an extremely abstemious regimen. In some cases, however, the energies become so depleted while fasting that it is really better to eat a small amount of food. In other words, limit the amount of food eaten. For this purpose limited diets will be prescribed in various diseases.

LIMITED DIET No. 20.—One glass of milk and a slice of whole-wheat bread. Three meals daily to be taken. The slice of bread to be masticated dry. The milk to be taken warm after the bread has been eaten. If there is not a definite enjoyment of the dry bread, take the milk only until you develop an ability to enjoy thoroughly the dry bread. Naturally you will have to masticate the dry bread very thoroughly in order to get the “taste” out of it. Sumik or buttermilk can be used instead of sweet milk if desired.

LIMITED DIET No. 21.—Breakfast, two ounces of raisins,

one glass of milk. Luncheon, six dates and one glass of milk. Dinner, one very ripe banana and one glass of milk.

LIMITED DIET No. 22.—From half dozen to one dozen dates and from one to two glasses of milk three times a day, the milk and the dates to be taken together; that is, take a date in the mouth, and a small quantity of milk, and masticate the milk and the date at one time.

LIMITED DIET No. 23.—Two or three ounces of raisins and one glass of milk two or three times a day.

LIMITED DIET No. 24.—Two ounces of any kind of sweet fruit that you may select, one ounce of nuts and two glasses of milk. Three meals a day.

LIMITED DIET No. 25.—Three meals daily of one ounce of flaked raw grains, any kind desired, one ounce of sweet fruit and a glass of milk.

LIMITED DIET No. 26.—One pint of soup selected from any of the recipes given, taken three times a day. You can vary the kind of soup at different meals if so desired.

LIMITED DIET No. 27.—One-half pint of soup and one slice of bread, three meals daily, making a selection of the soups from the recipes given.

LIMITED DIET No. 28.—One-half pint (measured after cooking) of boiled rice prepared in accordance with the recipes given in Diet No. 94 to be taken three times daily; flavor with a limited quantity of cream, milk or honey.

LIMITED DIET No. 29.—One pint of boiled rice taken twice daily with whatever milk may be desired, the milk to be taken very warm and at any time during the meal that it may be desired. Prepare rice as in Diet No. 94.

LIMITED DIET No. 30.—You can select any one of the limited diets of uncooked foods and each day that you follow the diet you can increase the quantity of the food you are taking ten to twenty-five per cent.; that is from about one-tenth to one-quarter of the amount. This quantity can be increased each day slowly in this manner until you begin to notice the lessening of your appetite from the succeeding meal, or a digestive disturbance arises, be it ever so slight. When you come to

symptoms of this character, immediately reduce the diet taken to the first amount you started with, and then begin to increase it in the same manner day by day as previously.

LIMITED DIET No. 31.—The same as Limited Diet No. 30, except you can make your selections from the cooked and uncooked foods, as your appetite may indicate.

THE EXCLUSIVE MILK DIET.

The physical changes that can be brought about through the influence of the milk diet within a short time would be considered unbelievable by the average individual. For instance, if one is greatly emaciated, or “run down,” and he should find a diet that would enable him to gain from three to five pounds a week, he would feel that he had made a marvelous discovery. But when I state that a gain of one pound a day is merely a fair average for those who try the milk diet, and are in need of additional flesh, I am not in any way overstating the facts. I have seen instances where from three to five pounds daily were gained, though these great gains were usually obtained after a prolonged fast. Naturally I am referring to those who are in actual need of increased weight; who have been poorly nourished on their previous diet. If one is up to normal weight, he will naturally make some gain on the milk diet, but it would not by any means equal what is possible when one has been under-nourished for an extended period.

Milk is undoubtedly more easily digested than any other food. It is more nearly allied to blood. It is quickly absorbed into the circulation and becomes a part of the tissues of the body with the use of considerably less energy than is required to bring about the chemical changes which are essential in preparing the ordinary foods for use in the human tissues.

It is claimed by some that milk is an animal food, and accepting this claim, I have sometimes felt that, therefore, it is not the best kind of food for man, but while it is an animal food in one sense, it is no more unnatural for the adult to take the milk of the cow than it is for the baby to take the milk

of its mother. It is a natural food product, for although the milk of the cow was originally designed for the calf just the same as the milk of the mother was designed for the infant, the constituent elements of the two kinds of milk are so closely allied that it is scarcely worth while discussing the unnaturalness of human beings using milk from animals other than their own kind.

No life is taken or jeopardized by the use of milk as food, so that, whatever academic discussion may decide upon the matter, one would be foolish to permit such discussions to interfere with what experiences have demonstrated to be a valuable article of food.

Milk, indeed, is the only substance in the world which does not permit of debate upon the point that it is intended by nature as a food. Nuts, fruit, grains, vegetables, fishes, animals—all are used as food, and even man himself, sometimes, but all of these have their own reasons for being, and are not specially designed to be eaten. Milk, however, has this one and only purpose. The egg is biologically intended as a food, in a sense, but only for the embryo, containing both embryo and its sustenance.

It is true that milk is an animal product. Sometimes it is an unclean product. In some instances undoubtedly it comes from more or less diseased animals. But I am satisfied that even when the milk does come from diseased cows, only in rare instances is the milk affected by the disease, except to the extent that it lowers its vitality; that is, its life-giving, health-building qualities.

Then, too, milk is a cleaner food than meat. It is not so likely to fill the system with impurities, especially when used without the addition of other foods. Milk added to the ordinary hearty meal is of doubtful value, though when it is apparently digested without special effort, and when no unpleasant symptoms ensue, there can be no objection to this method of taking it. It is generally considered a healthful practice to drink one or two glasses of milk at each meal, instead of coffee or tea, and when no greater quantity is taken,

as a rule, it will cause no trouble, though in some cases I have known biliousness, accompanied by a coated tongue, to arise almost entirely as the result of the addition of milk to the meal. •

Some have tried to take milk between meals, in order to increase the amount of nourishment that they were capable of assimilating. In some instances this is allowable, though, as a rule, it will usually result in over-nourishing the body, and be accompanied by a clogging of the functional processes, which will ultimately end in some unpleasant acute disease.

I am a firm believer in the benefits of the milk diet in cases where it is needed. But it must be milk alone. I do not claim that the diet will not be productive of benefits in some instances when other foods are used, because I have known some cases where a combination of milk and other articles have brought about satisfactory results, although I have known many cases where the results were exactly the opposite. I would say, however, if you are going on the milk diet that you should confine your food to milk alone, the only exception being the addition of whatever acid fruits might be essential to assist the stomach in digesting the large quantity of milk that it is necessary for one to take under such circumstances.

The quantity of milk that can be consumed when one is on a diet of this kind is almost unbelievable. For instance, if one is below medium size, say ranging from one hundred to one hundred and twenty-five pounds, he ought to drink from four to five quarts of milk a day. If his weight ranges from one hundred and twenty-five to one hundred and fifty pounds, then the quantity ought to range from five to six quarts a day. If the weight is between one hundred and fifty and one hundred and seventy-five pounds, then the quantity should range from six to seven quarts a day. And if the weight ranges from one hundred and seventy-five to two hundred pounds, then six to eight quarts a day, can be assimilated. Now eight quarts of milk, for instance, is two gallons, and when you think of consuming that much liquid food in a day no doubt it is somewhat startling to the

average individual, and many would maintain that it would practically be an impossible gastronomic feat. However, no special difficulty is realized in taking this quantity of milk by large men who are able to pursue the milk diet satisfactorily.

In some few instances I have found that the milk diet was not apparently beneficial, but the average will not run over one or two per cent.

I have seen hundreds of patients who would exclaim, when they were first informed that the milk diet had been prescribed for them, that they never liked milk; they were always prejudiced against it and could not possibly take it. I have seen these same persons, after being properly prepared for the diet, and after following definite detailed instructions for taking it, consume eight to ten quarts daily with apparently very great relish.

Merely because you have found that milk does not agree with you, when taken with your ordinary meals, you must not for one moment feel that it will not be a satisfactory food when taken in accordance with scientific instructions, such as are adapted to your particular and individual needs.

The milk diet should not be prescribed for one who is in ordinary good health. It is essentially an upbuilding diet for those who have been suffering with disease and are struggling to get back to normal health as speedily and perfectly as possible. In combination with the warm bath it is intended to slough off the impurities of the body remaining from disease.

In all cases of acute disease, especially where there is fever, the milk diet, or, as a rule, any other diet, should not be prescribed except in some few instances where it is given in very small quantities to excite the digestive functions of stomach and intestines. Fasting or near fasting is the proper practice in such cases. The effects that are desired in treating fevers can be far more readily and speedily obtained, without the slightest fear or danger, by the use of simple cold water.

Like fasting, the milk diet is very broad in its application. There are but few exceptions to its general helpfulness. In cases of rupture or epilepsy it must be used in small quantities

with great care. To any person naturally fat or fleshy or whose assimilative powers are exceedingly good, the milk diet is seldom of any benefit. On the other hand where there is digestive weakness or any defects of nutrition, where more and purer blood is desired, as a rule, it is highly beneficial. Where people of great weight are deficient in vitality, they may use the milk diet for a short time, but, as a rule, if it fails rapidly to increase the strength of the patient, it is inadvisable to continue it.

On the other hand, in cases where the blood pressure is too great, it speedily restores the normal condition, and in cases of arterio-sclerosis (hardening of the arteries), the effects produced in several cases have been no less than wonderful.

Other common diseases in which the diet is beneficial are dyspepsia, constipation, consumption, catarrh, asthma, rheumatism, etc.

It is well to know how to take milk so that one will get the fullest possible benefit from it. Milk, though a liquid, is a food just the same as peas, beans, bread or oatmeal, and the fact that it is a liquid does not exempt it from the natural laws which require that it shall be thoroughly mingled with the saliva in order to further the digestive processes.

In this, as in all other matters, Nature suggests the best course of procedure. The method of the infant in suckling, or that of the calf, shows that as the milk is being drawn from the teat the muscles close round the glands containing saliva and press out this important digestive juice to mix freely with the milk. Either make the opening of the mouth so small that quite a suction force is exerted when drawing in even small quantities of the milk or else sip rather than drink it and move it to and fro in the mouth a number of times before swallowing it. Where it is poured down in large quantities, the tendency is quickly to solidify in the stomach into a mass of hard curds which require far more digestive energy and a larger supply of gastric juice than would have been called for had the milk been properly mixed with the saliva.

Milk is said to require about one and a half hours for di-

gestion. It curdles almost immediately after it arrives in the stomach. The organic salts and water begin to be absorbed immediately, while the solid masses are passed on to the intestines where the fat is quickly absorbed by the lacteals.

If one secures milk direct from the farm it is always advisable to aerate it before drinking; that is, pour it from one vessel to another several times, until it foams up. This will give it an opportunity to be thoroughly mixed with the air. As a rule, this aerating process will take away the "cowy" taste.

A good plan is to use a straw punctured with eight or twelve pin-holes so that the milk is also aerated as it is sucked up into the mouth.

When attempting the milk diet, it is first necessary to secure milk of the proper quality. Impure milk can never be depended upon. It is useless to try a diet of this kind with poor milk. It must be the best, and when I say "best" I do not mean rich in cream, because Jersey milk is too rich in this particular food element. If you attempt to follow this diet and use the milk from Jersey cows, your experiment will probably end disastrously, though by reducing the quantity of cream to perhaps about one-half you can secure favorable results in many instances, even from this milk.

The best milk is said to come from Holstein cows, and the superiority of their milk is probably due to the unusual vigor of these animals. Anyone who is accustomed to taking milk can quickly detect the character of the milk by its taste. Of course, anyone can tell good milk from bad milk, but the right sort of milk has a pleasing, life-like taste, which indicates the presence of vitality; that is, the life-giving elements. Poor milk has a dead, flat taste, and while these two grades of milk might be exactly the same in their cream producing qualities, there would be a vast difference in their ability to build additional tissue.

Cows that are kept in stables all winter long and that are not allowed to exercise regularly, as a rule give a poor quality of milk. Cows require exercise to keep them healthy, the

same as human animals. They require proper care and food, for they cannot be expected to give healthy, vitality-building milk unless they are maintained of the highest degree of health.

The whole milk should be used just as it comes from the cow. No cream should be taken from it. If the milk stands long enough for the cream to rise, it should be stirred up with the milk before it is used.

After a large amount of experimentation, both personally and with thousands who were taking the milk diet, I am sure there is not a considerable difference in the nutritive value of natural milk and milk artificially heated where not allowed to exceed one hundred and twenty degrees Fahrenheit, or about as hot as it can be drunk with comfort. If the heating is taken to the boiling point, or even pasteurized (one hundred and fifty degrees heat) our experience is that it fails to produce the results we desire, hence we never allow milk either to be boiled, sterilized or pasteurized. Milk treated with any artificial preservative is totally unfit for food and certainly for use in the milk diet.

One of the most remarkable changes that begin to occur in those who are placed on the milk diet is the acceleration of the circulation of the blood. Within two hours the action of the heart will be accelerated and within twelve to twenty-four hours, there will be a gain of about six beats to the minute. In two or three days this increases to about twelve beats a minute. The pulse will be full and bounding, the skin flushed and moist and the capillary circulation quick and active. This natural increase in the circulation results from the increased amount of blood assimilated by the stomach and intestines.

Most remarkable evidences can be seen of the acceleration of the circulation while on the milk diet in those who are suffering with poor circulation. Feet and hands that might ordinarily be cold and clammy are usually warm and life-like after a few days on the milk diet, showing a decided improvement in the vital building elements of the blood.

The kidneys also show remarkably increased activity.

Those suffering from badly diseased kidneys may feel for the first few days slight pains, but these speedily disappear, and, no matter what the previous condition of the urine, whether highly acid or loaded with solids or salts in solution, it becomes bland, non-irritating and almost as clear as water. While the increased frequency of urination is troublesome in the first few days, the bladder soon seems to adapt itself to retaining a larger quantity without discomfort, and a larger amount of moisture leaves the body in perspiration by the improved capillary circulation of the skin, and it is possible that the lungs also aid more fully in the work of throwing off the additional moisture. It is well, however, for the patient to void the urine whenever the call is made as it is both unwise and dangerous to refuse to obey Nature's call in this regard and allow the fluid to be reabsorbed into the system.

The effect on the lungs is most marked. At first the breathing is quickened. Then, as the respiratory muscles become stronger, the inhalations become deeper and slower; the breathing capacity is increased; the circumference of the chest enlarges and the measurement of inspiration increases week after week over that of expiration. While some of the increase of the chest measurements may be accounted for by the increase of subcutaneous fat and muscular tissue, this does not at all detract from the fact that the capacity of the lungs themselves is largely increased.

Intestinal activity when one is resting, under any ordinary regimen, is almost unknown. But under the milk diet, the alimentary canal becomes active, healthy and normal. The muscles engaged in the peristaltic action of the intestines increase in size and strength, and, in many cases of chronic constipation, this is the only change that is necessary to remove the disability.

To show the remarkable powers of the milk diet in increasing digestive strength, one can as a rule adopt an exclusive raw diet after having followed the milk diet régime and satisfactorily digest food of this character, notwithstanding that as a rule, while eating cooked foods, and attempting

to immediately change to the raw diet, the digestive organs will be unable to assimilate the uncooked food.

As the treatment continues, the weight rapidly increases. The abdomen shows enlargement, then the thighs, the buttock, the neck, the shoulders, arms and face. Women who for years have tried all possible fake methods to fill in the hollows of the neck, smooth out facial wrinkles and develop flabby busts, find that the milk diet produces these desirable results, and at the same time adds the healthful color of the complexion that always accompanies normal health.

The skin always shows remarkable changes soon after beginning the milk diet.

The increased amount of pure blood circulating within the body seems to soften up the dead cells of the external layers and penetrate to the deeper layers, removing the dead and effete matter and restoring the functional activity that may have been dormant for years.

Naturally, the perspiration of such persons will be excessively strong and disagreeable until the whole body feels the gently increased healthful effects of the diet.

Because of the lack of stimulating residue from milk, temporary constipation may develop when on this diet. One remedy frequently valuable is to increase the quantity of milk. This larger amount flushes the functional system and the constipation rapidly disappears.

If this should fail, then take a daily enema of from two to three pints of slightly warm water. Repeat this if necessary for effect, or for the second enema use half a pint to a pint of slightly cool water. If, after several weeks of milk diet and the enema, the bowels fail to act normally of their own accord, one may use figs, raisins, with their seeds, stewed prunes or almost any available fruit, at the same time giving the abdomen as thorough and scientific massage as possible. Remember, however, that when you resort to the fruits or other food mentioned you cannot expect nearly such satisfactory results from the milk diet, since the use of these foods will divert the digestive

energies from the main object—that is, assimilating milk, so that this method of regulating the bowels should be employed only as a last resort. It is, of course, understood that enemas may be used for this purpose, at least in beginning the diet, preferably every other day, though after the first week this is usually not necessary.

Where diarrhœa occurs it will often disappear by reducing the quantity of milk and then after a short time the milk may again be used, increasing again to the required full amount. If this course does not produce the desired effect and the diarrhœa continues the use of sumik will usually prove effective. In some instances if one will eat half a dozen dates with a glass of milk, four or five times a day, the diarrhœa will be relieved.

The question is often asked how long a healthy man can subsist upon milk as his sole article of diet. We know of several people who are in perfect health who have lived from ten to thirty years on no other food.

In *Physical Culture* we have published numerous accounts of people who have lived upon milk for long periods. In one instance a man reported that he had lived on milk for twenty-one years. A college athlete lived on milk for a long period during his training at school. This seemed difficult to believe, but the contests he entered and for which he was trained did not perhaps require a great deal of endurance. In his case he drank from four to five quarts of milk a day. As a rule, this is about all one needs to supply the actual waste occurring day by day.

So, whatever the theorists may say, our large and varied experience has completely satisfied us of two things, namely, that people suffering from defective assimilation and who need to build up vitality speedily, can better do so on milk than almost any other diet, and that if one is so disposed he can live for any number of years on milk as his only article of diet, and maintain the most perfect, vigorous and abounding health.

In all cases it is advisable for the patient to fast one day or more before beginning the milk diet. This is not absolutely

essential, but the diet will be much more likely to agree than if one begins to take a quantity of milk following his ordinary meals. The fast seems to prepare one for the milk diet. After a rest of this nature the stomach is apparently in a condition to readily absorb nourishment, and it begins its work on a food like milk in a pleasing manner.

There is a class of patients, however, to whom a prolonged preliminary fast might result in injury. These are the thin, weak, anemic people suffering with wasting diseases, such as consumptives. If the bowels of such patients move freely every day, all the better. They usually take milk greedily, without any unpleasant symptoms, and the rapid increase in circulation caused by the diet produces a speedy elimination of the impurities in the blood and bowels.

The amount of milk to be taken in each case depends somewhat upon the size, weight and general condition of the patient. But the arbitrary rules that have been established are useful only as a general guide from which each person must deviate as his experience points out to be necessary.

In order properly to determine the amount of milk one should take, add the total number of inches in height to the weight in pounds. Now for every 25 units of this total only about one pint of milk is necessary in order to maintain the weight, but to add weight and to flush the system with nourishment one has to take one and one-half to two pints of milk for every twenty-five units. This rule is not absolute. In fact, the amount of milk one requires to supply the waste of the body depends largely upon the character of the assimilative organs, and upon the degree of energy expended in mental and physical exercise. But though the rule will not apply in all cases, usually this ratio of milk to height and weight can be depended upon.

There are various methods of taking the milk, though undoubtedly the most satisfactory way is to take from one-half to three-quarters of a pint every half-hour, while awake. If you fast for a longer period than a day or two, it would be advisable to take a considerably less quantity when beginning.

the diet, but if the fast has been of short duration one can begin on the full quantity of milk, that is, one-half to three-quarters of a pint every half-hour.

The patient should thoroughly understand at the outset that the fundamental principle of the milk diet is that he should not only charge, but surcharge, to the fullest extent of his ability, his whole body with nourishment that is assimilated from the milk. As I have before explained, the purpose is noticeably to stimulate the circulation and prompt the growth of new cells, new tissues, and at the same time cause the prompt elimination of all waste and effete matter remaining in the system. The sooner you can get to the full amount of milk prescribed, the better.

If you have not fasted over two or three days you can usually begin on a glass of milk every half hour the first day—taking the milk warm or cold as desired.

Do not be alarmed if, during the first day or two, all sorts of strange and sometimes unpleasant symptoms appear. There may be pains and functional disturbances with which you are not familiar, but there is no need to be alarmed, for these are but temporary inconveniences which will speedily pass away. I have never known of a single case followed persistently and conscientiously that has resulted in anything but good.

The most common symptom is that of bloating, a feeling of fullness, as though one could not possibly take another mouthful. If this feeling should continue for more than a day or two, then reduce the quantity, but as a rule, as the water in the milk is absorbed into the circulation the feeling of fullness disappears, and even where the full amount of milk is insisted upon it is very seldom that anyone notices an especially uncomfortable feeling of fullness after the first few days.

With some people there is a feeling of discomfort when cold milk is used. This will generally disappear if the milk is slightly warmed. By this I do not mean heated so that one will have to sip it as he does tea or coffee, but it should be

made just warm enough to give the stomach a comfortable feeling of warmth. Where milk is taken that has a temperature lower than that of the body, the stomach has to warm it, and digestion is arrested until it is brought up to the proper temperature. It will generally aid the process of digestion to see that the milk is as warm as the interior of the body before drinking it. On the other hand to those who prefer it cold—and by this I do not mean ice-cold, but comfortably cool—there is a tonic effect from the cold milk which more than compensates for the slight arresting of the digestive process. Hence the patient should seek to be guided in this matter entirely by his own taste and comfort.

In some cases where you “turn against” the milk, or when it produces nausea, this unpleasant condition can be entirely changed by the use of oranges, or other acid fruits. But in our large experience we have found that the most effective acid fruit to rely upon is the lemon. If the nausea persists, take the juice of a whole lemon, and if this does not suffice, take another, and another, until the unpleasant symptom disappears. One should not wait until he is entirely sick, but the moment he begins to “turn against” the milk, or seems to feel that the milk might make him sick, then is the time to begin “sucking a lemon.” The lemon should not be used at the same time that the milk is taken, but a few moments before, or a few moments after, if the symptoms of nausea appear. I have known persons while on the milk diet to need the fruit acid so badly that an ordinary lemon would be as palatable as an orange, and it would be eaten with the same enjoyment as one would experience while eating an orange. Pay no attention whatever to what the ordinary physician will tell you about the use of such acids as lemon juice and milk. No amount of theory and opinions can controvert the facts of our experience in many thousands of cases. We have had so many instances where people have taken lemon juice in the manner here suggested, and within half an hour to an hour have begun to take the full quantity of milk not only without injury but with marked benefit, that we know that any

patient can thus use lemons without fear of any evil consequence.

It is well in the early morning, if there is the slightest distaste to milk, to take a whole or half of a lemon before trying the milk. Another very agreeable way that we have found to take the required acid is to cut an orange in halves, take out part of the juice with a spoon and continue to squeeze into the orange the juice of the lemon, scooping it out in spoonfuls with a little of the orange juice each time until both lemon and orange are used. The orange helps to nullify the strong acid taste of the lemon and makes it more agreeable.

You should not anticipate these symptoms of nausea and accustom yourself to the taking of orange or lemon juice. If there is no definite call, by all means avoid taking the fruit-juice. Sometimes the tongue becomes coated or one is temporarily annoyed by a bad taste in the mouth while on the milk diet. The same means advised for nausea will successfully assuage these minor difficulties.

While I have thus spoken of the advantage of using acid fruit-juices in the milk diet, it must be most understood that this is almost the only exception which is allowed while one is partaking of this diet. To mix other foods with the milk is not only to retard one's own up-building, but sometimes to produce decided injury. There are cases in our institutions where patients will beg for some addition to the milk diet and occasionally the doctors give them the desired latitude, but it is always contrary to my expressed wish and both inadvisable and unwise. A patient who seriously desires to get well will exercise self-denial and thus expedite recovery.

The prevailing prejudice against combining acid fruits and milk will no doubt come to mind in connection with this suggestion. There is, however, no possible danger of unpleasant results, if instructions are followed in every detail. It has been found that in some instances lemons cause nausea. In such cases, if sweet fruit, such as dates or raisins are used, the symptoms will immediately disappear. Honey can sometimes be used under such circumstances. These unpleasant

symptoms in connection with the use of lemon-juice seem to call for something of an opposite nature, that is, sweets. If yours should happen to be one of these exceptional cases do not make the foolish mistake of trying to take sugar, or other sweets that have gone through a prolonged cooking process, as this would only aggravate the difficulty. Only natural sweets such as honey, raisins, dates or figs should be used.

When following the milk diet the feeling of fullness in the abdominal region which I have mentioned sometimes becomes uncomfortable only towards night. One need not worry about this in the least. A large quantity of the milk naturally fills the alimentary canal almost to its extreme capacity, and, beyond the discomfort of the symptoms of fullness, there are no unpleasant results. While on the milk diet one should be very careful to give the abdominal region full opportunity to expand to the extent necessary. Any tightness of clothing, belts or corsets at this time very seriously interferes with the digestion of the milk, and should by all means be avoided.

Live as much as possible in the open air when taking the milk diet. It is virtually impossible to digest a large quantity of milk if one does not live in a very well ventilated room, or else out-of-doors. The more nearly one can be out-of-doors, the better progress he will make. The symptoms of nausea and biliousness which frequently accompany the milk diet are often caused by breathing confined and impure or vitiated air.

Where the patient's stomach is very weak or deficient in digestive juices, the milk will sometimes form into tough curds which are slow and hard to digest, especially if it be taken too rapidly or at too low a temperature. Sometimes patients vomit these curds and they are so large as to lead one to wonder how they could possibly come through the esophagus. In such cases, in addition to the free use of lemon juice, greater care than before should be exercised to take the milk very slowly and at an increased temperature. When such symptoms appear in some cases the quantity can be reduced, though as a rule it is better to continue taking a liberal supply as this

flushes the system and helps to remedy unpleasant manifestations of this character.

It is not necessary to drink water while on the milk diet, though if one has the desire for liquid there is no objection to taking it. There is such a large quantity of water in the milk that, as a rule, one has no desire for water, that is, if one is taking sufficient milk to flush the system. When a smaller quantity is taken in some instances there is a desire for water, which can easily be satisfied and with benefit.

There are some authorities who advocate that the patient should rest completely when taking the milk diet. One practical reason for this is that many weak stomachs cannot retain the milk unless the body is lying quietly and more or less relaxed. The contention is made that disease can be eliminated and functional disturbances corrected better and more thoroughly while the body is in a state of complete relaxation than when it is in a state of activity. During a period of rest if the body can take up and assimilate the milk, there is an increased supply of nutrition and a consequent building up of the energy which disease has depleted. The more complete the inactivity of the voluntary muscles, the brain and the nervous system, the better the prospect of restoring the normal functions of the other organs.

Dr. Weir Mitchell claims that a complete rest taken by his severe cases is of the greatest benefit. For weeks these patients are not permitted to sit up, sew, read or write. They are fed by a nurse, and even talking is prohibited. Many people with nervous disorders and those who suffer from stomach troubles seem to find it impossible completely to relax, and to such as these the milk diet is far more effective if they can be prevailed upon to take complete rest.

Sometimes the milk diet is inclined to make one feel lazy and logy, and if he would simply give way to his natural instincts under these circumstances he would rest the greater part of the time. This feeling of laziness, of course, is due greatly to the unusual amount of energy that is required in digesting and assimilating such a large quantity of milk.

Furthermore, the milk diet is not adapted to the purpose of increasing the strength of the external muscles, although it does accomplish this object in many instances. The diet is really more for the purpose of adding to the vital vigor of the blood-making organs. For instance, it will materially increase the strength of the muscular tissue that is so essentially a part of the digestive processes. It will tone up, thicken and add strength to the walls of the stomach and intestines. One might say the weakness of this muscular tissue is the cause of many digestive defects. A prolapsed stomach, for instance, is caused simply by the weakness of the supporting structures of the stomach and the adjoining organs, and as these weakened structures are strengthened the stomach will slowly but surely assume its natural position. The same can be said of all the organs in diseased conditions. Constipation, for instance, and an inactive alimentary canal, are brought about really through the weakness of the muscular tissue of this important organ. One reason why the milk diet is so valuable in treating constipation, and all difficulties of the alimentary canal, is that it adds strength to the muscular tissue of those organs, and quickly remedies many of the defects that appear when following the ordinary dietetic régime.

The majority of patients will not require absolute rest while taking the milk diet. There are others who should rest absolutely until a material change for the better has been made in their condition. Among these are those with marked vital depletion; neurastheniacs; those with more than the lightest forms of Bright's disease and diabetes; those with prolapsus, especially prolapsus of any abdominal organ; those recovering from a severe attack of appendicitis; those with marked ovarian or uterine disturbances; and those recuperating from serious debilitating acute diseases as typhoid, pneumonia, etc., or major operations. Tubercular cases demand rest for at least the first few weeks of treatment. All of these cases should endeavor to secure a certain amount of exercise in bed, such as, stretching, deep breathing, arching the back upward while lying on the back, raising the head and shoulders a few inches

while lying face down, lying on either side and stretching the upper arm and leg in opposite directions, and then reverse, etc. The first exercise to begin after this is moderate walking.

Under the milk diet, increase in weight becomes an important consideration, and it is well to keep a careful record of this. In ordinary cases the weight will increase from a half pound to a pound and a half per day, and a gain of twenty pounds in one week is not extraordinary when the diet follows a fast.

There are those who will say that weight gained so quickly is of no value. Ordinarily speaking, this would be true. The tissues need not necessarily be undesirable even if soft, for under the proper regimen they speedily become hardened and the gain made is then permanent. The chief benefit seems to be in the substitution of new and perfect tissue for the waste and effete tissues. The tissue so gained is found to be a tremendous step to increased health. And if the change from milk to solid foods is properly made, there is an immediate improvement in endurance and the gain in weight is permanent. Whatever the theory may be, it works out in actual practice that, by giving the assimilative organs nothing whatever to work upon but milk, they gain renewed energy and power and are far better able to do their ordinary work on returning to the ordinary diet than they did before.

This diet is especially indicated in many cases of tuberculosis. Some care should be used in the advanced stages of this disease to prevent the danger of hemorrhage, which is often a possibility owing to the increased quantity of blood so suddenly supplied, and the consequently greater blood pressure in the lungs as elsewhere. If there are weakened tissues in any part of the lungs the possibility of hemorrhage is much more imminent, so that the patient suffering from this disease should especially try to avoid violent movements. In a case of this kind it is also well to increase the amount of milk consumed each day very gradually. In this way the tissues of the lungs will adjust themselves to the new conditions of the greater blood supply and pressure. The increased vitality soon to be gained in this way will also develop such strength

as to make hemorrhage unlikely after a week or two upon the diet. But in the beginning one should be careful. I certainly would not advise the consumptive to avoid the milk diet for fear of this, because in many cases it offers practically his only hope for life.

RECIPE FOR SUMIK.—Enclose unskimmed sweet milk in an air-tight jar or bottle. Allow it to remain in the temperature of an ordinary living room until it has become clabber. If you like it very tart, then do not use it for two or three days after it has become clabber. If you do not like the strong acid taste, then use it as soon as it becomes clabber. Before using the clabber it should be thoroughly stirred or aerated with an egg beater, until it assumes the consistency of very thick or whipped cream.

Remember it is not usually advisable to take sumik and sweet milk indiscriminately while on the milk diet. If one feels like making a change it is better to take sweet milk one day and the sumik the next day.

The question is very frequently asked as to whether or not condensed milk or powdered milk could be used for the milk diet. As a rule these substitutes are not satisfactory; at least I have never found a brand that could be strongly recommended. They might be used in some instances when on the fruit and milk diet, though for an exclusive milk diet they are not satisfactory. The only brand of condensed milk that I have ever used, even with a moderate degree of satisfaction, is that put up by Van Camp. I understand their milk is condensed below the boiling point. Others, as far as I know, are boiled during the process of condensation. It should be used unsweetened.

The makers of this brand of milk have no knowledge of my experiments with their product, and these statements are by no means in the nature of an advertisement, although they will doubtless result in an increased demand for their product on the part of those following the milk diet. If there are any other condensed milk manufacturers whose product is prepared without boiling, I shall be glad to learn of their brands.

THE WARM BATH IN THE MILK DIET.—One important adjunct to the milk diet is the daily warm bath. Unless there is a tendency towards insomnia, when it may be given in the evening, it should be taken in the forenoon. The first bath should last not more than ten or fifteen minutes. The following day, the length of time should be increased ten or fifteen minutes and so on until a full hour is occupied. It is well to take this warm bath daily so long as one is partaking of the milk diet.

Let the tub be prepared with water at a temperature of ninety or ninety-five degrees Fahr. As soon as the patient becomes accustomed to this temperature, the heat of the water should be gradually increased until he feels perfectly comfortable. Let him lie in this until about five minutes before he is ready to leave the bath, then enough hot water should be added to produce a thorough glow of warmth throughout the body. The heat should never be great enough to produce dizziness or discomfort. It is well to emphasize and reimpress upon the mind of the reader this point in regard to the increase of temperature of the bath. Begin at a temperature that is comfortable and produces no unpleasant sensations whatever; add more hot water about five minutes before leaving the bath until the water is as warm as the patient can comfortably bear it.

In very hot weather it is well to begin the bath at a slightly lower temperature than 90 to 95 degrees Fahr. as this abstracts a little of the excessive heat from the body of the patient and adds to his comfort, the chief purpose of the bath being to produce a feeling of complete relaxation, and thus aid the process of recuperation.

Naturally, also, the opening of the pores of the skin and the perspiration induced by the warmth are a great help to the important organs of elimination. This is the reason that it is not wise for the patient, after the warm bath, to take a cold rub down or a shower, as is usual after taking an ordinary hot bath. There is no need to be afraid of taking cold after such a bath. The warmth of the body and the increased heart

action caused by it and the milk diet are sufficient to assure the patient from any such evil result.

AFTER TAKING THE MILK DIET.—It is natural that those who have been benefited by the milk diet should desire to retain all the advantages thus gained and keep on climbing up the invigorating hill of health. Our experience demonstrates that not only are the benefits gained under this diet large and gratifying, but that their permanency is entirely in the hands of the individual.

There is one important thing which I wish fully to impress upon the minds of my readers who think of taking the milk diet. It is this. It very often occurs that while there is a most decided improvement while under the milk cure, many patients have to wait until ordinary habits and diet are resumed before they realize to the full all that the milk diet has accomplished for them. In other words, the good effect does not cease when one stops using the milk. It is something like an engine on a track. Start it and get it going well in a certain direction and then shut off the steam. If you do not apply the brake, it will run several miles before it will stop, owing to the impulse or momentum originally given. The milk diet seems to do the same thing. If one is wise and thoughtful enough to live naturally and reasonably, then there is no putting on the brake, and the result is increased power and vigor as the days go by. The circulation is more active, the digestion more nearly perfect, and all the bodily functions work normally and easily.

All that is necessary, now, to keep and retain these blessings of health is to live in accordance with the principles advocated in these volumes. Eat properly, avoiding complexity of foods and varied menus; study our chapters on diet; learn the fundamental principles and obey them. Each person must decide for himself whether to eat one, two or three meals a day and whether he will be a vegetarian, live on a nut and fruit diet. eat only natural foods or live "as other people do."

It is important that one learn to breathe properly and breathe pure air both day and night.

It is equally important that all the muscles of the body be given their daily and healthful exercise, and if possible out-of-doors.

It is important and helpful that the body be exposed at every opportunity to air and sunlight, as this is the most perfect prophylactic against all catarrhal complaints.

While speaking on this subject of exposing the body, naturally the question of clothing arises. Learn to live with as little clothing as possible, winter and summer, and at all times so clothe yourself that the air has full opportunity to circulate and reach every part of the body.

If your eyes are not in a perfect condition, be sure to have perfectly adjusted spectacles, as when improperly adjusted they are often a source of great distress. The great changes that take place during the milk diet often materially affect the eyesight as well as other parts of the body. So it is well at the close of the diet, if glasses must be used, to see that they are perfectly adjusted, though as increased vitality is secured one can often discard glasses.

Cultivate the water-drinking habit after resuming your regular diet, but let it be cool water sipped gently rather than very cold water drunk down in large quantities. Carefully avoid all ice-cold drinks.

Keep the mind serene and as free as possible from all disturbing emotions. Live nobly and uprightly in your relationship to your fellow-men. Obey the highest dictates of your conscience and seek to cultivate it to the highest degree of sensitiveness and perception, just as you do your muscles, and thus you will live in health, peace and blessedness so long as the period of your term on earth extends.

SPECIAL MILK DIET REGIMENS.

MILK DIET No. 32.—First day one-half pint of milk every hour. Second day, one-half pint of milk every three-quarters of an hour. Third day, half pint of milk every half hour. Fourth day and thereafter, one to one and one-half glasses

of milk in accordance with the desire, endeavoring gradually to increase the amount until the capacity of the patient is reached. Absolutely no other food is to be used in this milk diet, with the exception of lemon juice or other fruit juices such as may be necessary to counteract tendencies towards nausea or biliousness.

In ordinary cases this diet should be maintained for a period of six weeks at least, but where the patient suffers from extremely low vitality or great emaciation, it may often be continued advantageously for three or four months or even for years if necessary.

MILK DIET No. 33.—One-half pint of milk every half hour during the first day; from one-half to three-quarters of a pint of milk every half hour the second day in the forenoon, and only one-half pint every half hour in the afternoon. The same amount each day thereafter.

MILK DIET No. 34.—One pint of milk three times daily, morning, noon and night. This diet is not sufficient to entirely nourish the body, yet it is a splendid regimen when one is suffering from a surplus accumulation of flesh as it is necessary to very materially reduce the fatty tissue with a view of more quickly bringing about the curative processes in the treatment of any disease. This diet is more often prescribed for those who are desirous of reducing in weight, and who have not the strength of will to adopt the entire fasting process.

MILK DIET No. 35.—One to two pints of very warm or hot milk three times daily, morning, noon and night. You will note that I refer to this milk as being hot. I do not mean, however, that the milk should be heated beyond a temperature where it can be drunk freely without sipping. The object in heating the milk is materially to assist in its digestion.

MILK DIET No. 36.—One to two pints of very warm milk taken three times daily, also one or two glasses of cold milk taken in the morning on arising and between each of the milk meals referred to, and upon retiring at night. This is a fairly good substitute for the regulation milk diet wherein the milk is taken every half hour. If the milk can conveniently be se-

cured warm at each of these periods you may increase the quantity of milk beyond one and two glasses, morning and night and between meals. If you are a business man and desirous of trying the milk diet, and you cannot take it every half hour, as suggested, you can follow this plan, taking more at each "meal," and you would not then be required to take the milk so frequently. I would say, however, that this method is not by any means so satisfactory.

MILK DIET No. 37.—This consists of skimmed milk taken in same manner as described in Milk Diet No. 32.

MILK DIET No. 38.—This consists of sumik taken one-half pint each hour during the day. Drink water as desired.

MILK DIET No. 39.—This consists of sumik whenever craved during the day and in quantity desired.

MILK DIET No. 40.—This consists of half a pint to a pint of buttermilk every hour during the day.

MILK DIET No. 41.—This consists of buttermilk to be taken whenever craved and in quantities desired.

TO CHANGE FROM FULL MILK DIET.

In changing from the full milk diet to the more conventional diet, it is frequently necessary to be extremely careful, that the good of the fast and milk diet may not be undone. The most satisfactory plan is to continue on milk as usual, from early morning until 1 or 2 p. m. From then until six o'clock nothing is taken except water as desired. At six o'clock a vegetable meal is taken, this to be thoroughly masticated. A raw vegetable salad, one or two cooked vegetables, and a slice or two of whole wheat bread or some sweet fruit (two ounces or so) will make a satisfactory evening meal. This meal may be begun with a small bowl of vegetable soup if desired. After two or three days one or two soft boiled or poached eggs may be added to the meal, or nuts and cheese may be taken if extreme care is given to their mastication. This plan may be continued indefinitely. Occasionally fruit and milk can be taken to advantage for the evening meal.

When a still further change is desired, take the milk as

usual until ten o'clock. At one o'clock take a fruit meal with milk, and in the evening the meal as described above. Still later a breakfast of fruit, a luncheon of fruit or vegetables and the usual evening dinner may be taken. It will be found beneficial to the majority, however, to depend upon two meals a day only. I might here mention that if for any reason it is so desired, when first changing from the full milk diet, the meal may be taken at 8 or 9 a. m. and the milk diet begun at one o'clock and continued till seven o'clock.

MILK AND FRUIT DIETS.

MILK AND FRUIT DIET No. 42.—This consists of three meals daily of from one to two pints of very warm milk, and with as much acid fruit as one desires to take at such meals. By acid fruit are meant apples, oranges, peaches, pears, strawberries, blackberries, etc. Any of these acid fruits can be taken with the milk at these meals. Take the milk at different times during the meal; that is, eat a small quantity of fruit and then take a glass of milk, alternating the meal in this manner.

MILK AND FRUIT DIET No. 43.—This consists of three meals daily of acid and sweet fruits and milk. Confine the first meal, however, to the acid fruits and from one to two pints of milk; the second meal to sweet and acid fruits and a smaller quantity of milk; the third meal is similar to the second. On this regimen it is a good plan to mix the acid and the sweet fruits; otherwise, the sweet may pall upon the taste.

MILK AND FRUIT DIET No. 44.—This consists of two meals daily of sweet milk and acid fruits, with very warm milk, as in the previous diet. The first meal may be taken as usual between ten and twelve o'clock, the second in the evening. In this diet a pint to a quart of milk may be taken in the morning.

MILK AND FRUIT DIET No. 45.—This consists of sumik and sweet fruits taken three times daily, as desired. On this diet one may take any sweet fruit that he especially craves. It is desirable usually to add a little of the sumik to the fruit in your mouth as you are masticating it.

MILK AND FRUIT DIET No. 46.—This consists of three meals a day of sumik and dates. On this diet the dates and the sumik should be masticated together by simply taking a date in the mouth, seeding it, and then taking a small quantity of sumik at the same time, masticating the date to a complete liquid before swallowing it. On one occasion I lived exclusively on this diet for three months.

MILK AND FRUIT DIET No. 47.—This consists of butter-milk and dates, to be taken the same as sumik and dates; that is, three meals a day, using from one to two pints of butter-milk and dates as desired. As a rule one may take from one to two dozen dates at a meal of this kind, provided the appetite is fairly good.

COMBINATION MILK DIETS.

In these the quantity of milk is not limited, and you take the milk every half hour, as advised in the ordinary milk diet. After having continued on one of these diets for several days, you can take the milk less frequently, and take more at each meal—though as the quantity is increased remember it is better to have the milk hot. For instance, after you have become accustomed to the milk diet, you may frequently drink as much as a quart at one time, if it is taken as hot as can be conveniently drunk without any feeling of discomfort. Remember, however, it should never be boiled or heated to a temperature beyond that at which you drink it.

COMBINATION MILK DIET No. 48.—Take milk as prescribed in the ordinary milk diet; that is, one-half pint every half hour until 1 P. M. At six or seven o'clock eat an ordinary meal of foods that previous experience has shown you will thoroughly agree with you.

COMBINATION MILK DIET No. 49.—Take milk until 1 P. M., as prescribed in previous diet: that is one-half pint every half hour. At six or seven o'clock take a meal consisting of soups and vegetables, according to the taste, using the greatest care to masticate thoroughly and to avoid over-eating.

COMBINATION MILK DIET No. 50.—Take milk as previously prescribed, that is, one-half pint every half hour, until 1 P. M. At six or seven o'clock take a meal consisting of one kind of acid fruit, one kind of sweet fruit and one kind of nuts. Milk can be taken with this meal, if desired.

COMBINATION MILK DIET No. 51.—Milk diet as prescribed, that is one-half pint every half hour, until 1 P. M. Meal at six or seven o'clock, consisting of bread, butter and fruit, one kind of acid and one kind of sweet fruit.

COMBINATION MILK DIET No. 52.—Milk as prescribed previously, that is one-half pint every half hour, until 1 P. M. At six or seven a meal consisting of meat, as outlined in the regular meat diets, and green vegetables.

COMBINATION MILK DIET No. 53.—Milk as prescribed previously, that is one-half pint every half hour, until 1 P. M. Meal at six or seven consisting of meat and green salads, such as onions, lettuce, watercress and the like; no bread to be used.

COMBINATION MILK DIET No. 54.—Take sumik whenever desired and as much as you crave, until 1 P. M. At six or seven o'clock eat an ordinary meal of foods that previous experience has shown you will thoroughly agree with you.

COMBINATION MILK DIET No. 55.—Take sumik whenever desired and as much as you crave, until 1 P. M. as previously directed; at six or seven o'clock take a meal consisting of soups and vegetables, according to the taste, using the greatest care to masticate thoroughly and to avoid over-eating.

COMBINATION MILK DIET No. 56.—Take sumik whenever desired and as much as you crave until 1 P. M.; at six or seven o'clock a meal consisting of one kind of acid fruit, one kind of sweet fruit, and one kind of nuts. Milk or sumik can be taken with this meal, if desired.

COMBINATION MILK DIET No. 57.—Take sumik whenever desired and as much as you crave until 1 P. M.; at six or seven o'clock a meal consisting of bread, butter and fruit—one kind of acid and one kind of sweet fruit.

COMBINATION MILK DIET No. 58.—Take sumik whenever desired and as much as you crave until 1 p. m.; at six or seven a meal consisting of meat, as outlined in the regular meat diets, and green vegetables.

COMBINATION MILK DIET No. 59.—Take sumik whenever desired and as much as you crave until 1 p. m.; at six or seven o'clock a meal consisting of meat and green salads, such as onions, lettuce, watercress and the like; no bread to be used.

COMBINATION MILK DIET No. 60.—Between six and eight in the morning eat an ordinary meal of foods that previous experience has shown you will agree with you thoroughly. Beginning at 1 p. m. take milk as prescribed in the ordinary milk diet, that is, one-half pint every half hour, until retiring.

COMBINATION MILK DIET No. 61.—Between six and eight o'clock in the morning take a meal consisting of soup and vegetables, according to the taste, using the greatest care to masticate thoroughly and to avoid over-eating. Beginning at 1 p. m. take one-half pint milk every half hour, until retiring.

COMBINATION MILK DIET No. 62.—Between six and eight o'clock take a meal consisting of one kind of acid fruit, one kind of sweet fruit and one kind of nuts. Milk can be taken with this meal if desired. Beginning at 1 p. m. take one-half pint of milk every half hour, until retiring.

COMBINATION MILK DIET No. 63.—Between six and eight o'clock a. m. take a meal consisting of bread, butter and fruit—one kind of acid and one kind of sweet fruit. Beginning at 1 p. m. take milk, one-half pint, every half hour, until retiring.

COMBINATION MILK DIET No. 64.—Between six and eight o'clock a. m. take a meal consisting of meat, as outlined in the regular meat diets, and green vegetables. Beginning at 1 p. m. take one-half pint of milk, until retiring.

COMBINATION MILK DIET No. 65.—Between six and eight o'clock a. m. take a meal consisting of meat and green salads,

such as onions, lettuce, watercress and the like. Beginning at 1 P. M. take milk as previously prescribed, until time to retire.

COMBINATION MILK DIET No. 66.—Between six and eight in the morning eat an ordinary meal of foods that previous experience has shown will agree with you. Beginning at 1 P. M. take sumik, as often as desired and in sufficient quantities to satisfy the appetite, until retiring.

COMBINATION MILK DIET No. 67.—Between six and eight in the morning eat a meal consisting of soup and vegetables, according to the taste, using the greatest care to masticate thoroughly and to avoid over-eating. Beginning at 1 P. M. take sumik, as prescribed in Combination Milk Diet No. 66.

COMBINATION MILK DIET No. 68.—Between six and eight in the morning take a meal consisting of one kind of acid fruit, one kind of sweet fruit and one kind of nuts; milk may be taken with this meal if desired. Beginning at 1 P. M. take sumik, as prescribed in Combination Milk Diet No. 66.

COMBINATION MILK DIET No. 69.—Between six and eight in the morning take a meal consisting of bread, butter and fruit, one kind of acid and one kind of sweet fruit. Beginning at 1 P. M. take sumik, as prescribed in Combination Milk Diet No. 66.

COMBINATION MILK DIET No. 70.—Between six and eight o'clock in the morning take a meal consisting of meat, as outlined in the regular meat diet, and green vegetables. Beginning at 1 P. M. take sumik, as prescribed in Combination Milk Diet No. 66.

COMBINATION MILK DIET No. 71.—Between six and eight o'clock in the morning take a meal consisting of meat and green salads, such as onions, lettuce and watercress. Beginning at 1 P. M. take sumik, as prescribed in Combination Milk Diet No. 66.

COMBINATION MILK DIET No. 72.—A quart of milk to be taken hot immediately upon arising (115 to 120 degrees); a meal of ordinary foods, that you know from previous ex-

perience to be wholesome, of limited variety, to be taken some time between 12 and 5 o'clock; a quart of milk to be taken hot immediately before retiring at night.

COMBINATION MILK DIET No. 73.—A quart of sumik to be taken immediately upon arising; a meal of ordinary foods that you know from previous experience to be wholesome, of limited variety, to be taken some time between 12 and 5 o'clock; a quart of sumik to be taken immediately before retiring.

COMBINATION MILK DIET No. 74.—A quart of buttermilk to be taken immediately upon arising; a meal of ordinary foods that you know from previous experience to be wholesome, of limited variety, to be taken some time between 12 and 5 o'clock; a quart of buttermilk to be taken immediately before retiring.

FRUIT DIETS.

An acid fruit diet is to a certain extent of value as a means of replacing a fast where an abstemious regimen is needed and one does not possess sufficient power to fast entirely. This more especially refers to acid fruits alone, for, by combining sweet with acid fruits, one can be completely nourished in every respect. Even the acid fruits alone contain about all the elements that are needed to nourish the body, and one could live on them for an indefinite period, though of course he would not be as satisfactorily nourished as he would on a more nutritious diet. For the convenience of those who might not fully understand what we mean by acid fruits, I would say that the following are the principal fruits of this character: Apples, apricots, blackberries, cherries, grapes, grape-fruit, lemons, limes, nectarines, oranges, pears, pineapples, strawberries and plums. There are other acid fruits, but these represent the principal varieties that are in common use. The acid fruit is distinguished by what might be termed partially sour taste, though as a rule it does not possess enough of this characteristic to make the taste unpleasant. Lemons and limes, for instance, contain

more of the acid characteristics than other fruits. Grapefruit and pineapple furnish a strong acid flavor, which as a rule is not unpleasant. Apples are sometimes of the "sweet" variety and under such circumstances cannot be used as acid fruit, nor are such apples as a rule sufficiently sweet really to be classed as sweet fruit.

The sweet fruits in common use are classed as follows: Bananas, figs, persimmons, raisins and dates. Though the bananas are classed as a sweet fruit they can hardly be referred to in the same class as dates, figs, raisins and sweet fruits of this variety. Bananas are more closely allied to bread than any other fruit. In some countries they are as staple an article of food as bread is with us. Remember, however, that the bananas that come to us are usually cut green and do not ripen properly. Great care should be used in selecting properly ripened bananas. The skin of the banana that is in good condition to be eaten usually contains black spots of the shape and form, though not the color, of the freckles on the face of a boy. The banana is not too ripe, even if the skin is entirely black, provided the meat inside is solid and free from all soft "spots."

Many will no doubt find it difficult to secure fresh acid fruits, and under such circumstances unfermented fruit-juices may be used such as are found in the apple and the grape. Dried fruits may also be used, though they are not quite as satisfactory, yet they will serve the purpose fairly well. For instance, dried apples or peaches may be used instead of the fresh variety and one will secure results that are almost as satisfactory, especially when the fruits have been dried without the use of sulphur, which of course has a slightly detrimental influence.

FRUIT DIET No. 75.—Three meals daily of acid fruits; not more than one kind of fruit to be eaten at one meal. On this regimen one can satisfy the appetite on the particular kind of fruit that he has selected for that meal.

FRUIT DIET No. 76.—Two meals daily of acid fruits, to be taken from 11 to 12.30 and from 5 to 7 o'clock. On this

regimen any two kinds of fruits that are desired may be used at each meal.

FRUIT DIET No. 77.—Three meals daily of one or two kinds of acid fruits as desired, chopped up and sweetened with honey, to the extent of one's desires.

FRUIT DIET No. 78.—Three meals daily of acid and sweet fruits. At each meal no more than one kind of acid fruit and one kind of sweet fruit should be taken, though the fruits can be changed at different meals: peaches and dates; oranges and bananas; apples and figs; plums and raisins; grapes and bananas; apples and dates; pears and bananas. When eating these meals it is a good plan to combine the acid and sweet fruits, that is to chew them together, or mix them together about half and half, in order that one may get the flavor of both. These fruits are more palatable when eaten in this manner, and one can usually enjoy more of them. For instance, the sweet fruits such as dates, figs and raisins, are inclined to pall upon one, though when mixed with some acid fruit they will be far more appetizing and more may be eaten and digested.

FRUIT DIET No. 79.—Acid and sweet fruits chopped up fine, thoroughly mixed together and then cream or olive oil added; be careful not to add both cream and olive oil; either one or the other must be used. If one is not prejudiced against olive oil it will usually make a more satisfactory combination than the cream. Three meals daily, consisting solely of this combination should be taken.

UNCOOKED OR RAW DIETS.

FRUIT AND NUT DIET No. 80.—One kind of acid fruit and one kind of sweet fruit chopped up fine and mixed together, as in diet No. 79, and one to two ounces of nuts added for flavoring. The olive oil or cream may be used with the combination if desired, though be careful not to make it too rich. Almost any kind of nuts may be used in connection with this combination. Should the nuts be very rich and oily, such as the Brazil or the black walnut, a very small quantity

must be used; in fact, under such circumstances olive oil or cream should not be added to the combination. Pignolias are perhaps the most satisfactory nuts for this particular diet, though cashew nuts, when they can be secured, are still better. This last named is more closely allied to bread than any other nut. It contains less oil and is more easily digested than other nuts. The following combinations of fruit and nut diets are suggested: raisins, oranges and Brazil nuts; dates, apricots and filberts; bananas, pears and pignolias; apples, dates and pecans; peaches, bananas and almonds; pears, figs and walnuts; oranges, dates and cashew nuts.

CEREAL COMBINATION DIETS.—One should remember that the uncooked foods contain more nourishment pound for pound than when cooked; therefore, not so much food is required when one is following an uncooked food regimen. Many of the raw foods recommended are also highly concentrated, and the greatest care must be used when following an uncooked diet to avoid the evils that result from over-eating.

CEREAL DIET No. 81.—Ordinary flaked or rolled oats, wheat, rye or barley moistened with cream, adding raisins to taste. Begin with a fourth to one-half pound of this mixture at each meal, taking two meals a day. This allowance can be increased gradually, using the greatest care not to eat beyond the ability to digest. One may drink whatever quantity of milk is craved at each meal. Three meals daily.

CEREAL DIET No. 82.—Two meals daily of the same combination as described in Diet No. 81; add one or two ounces of nuts in accordance with the desire.

CEREAL DIET No. 83.—Two meals daily of the same combination as described in Diet No. 81, though do not take milk. Add to the last meal a green salad of some kind, watercress, lettuce, spinach or the like, in accordance with the desire.

SALAD DIETS.

Green salads of various kinds seem to furnish various elements that occasionally are especially needed to perfectly

nourish the body. The organic salts that are considered to be so valuable by many dietetic experts are furnished abundantly by these salads. The most valuable among the various "green things" are onions, lettuce, watercress and spinach. Lettuce, for instance, is a remarkable remedy in many instances where the nerves appear to be poorly nourished. Onions furnish a splendid diet to cleanse the alimentary canal. Watercress is to a certain extent valuable in a similar way, no doubt largely because of its woody fiber as well as the cleansing and nourishing influence of its food properties. Spinach is recognized everywhere as being a splendid blood purifier. It undoubtedly has some properties of this character, provided of course it can be properly digested and assimilated. It is unquestionably of more value when eaten raw than when cooked, though the food value is not greatly lessened by the cooking.

Salads can be eaten without dressing when they appear to be appetizing. Many persons find that they are able to enjoy them without anything being added. If one will provide himself with sorrel, by combining this with watercress, spinach or lettuce, it perfectly supplies the pleasing acid taste which is usually given to salads by the addition of lemon juice or vinegar. This is of course preferable to the ordinary dressing that is used on salads; however, when dressing is essential, ordinary lemon juice adds a pleasing piquancy to the flavor of the salad. Salt can be added if desired, though as a rule this is not needed. When one is accustomed to using an ordinary French dressing, made from vinegar, oil, salt, pepper and mustard, a very satisfactory substitute can be made by combining one-third olive oil and two-thirds lemon juice and salt to taste. Or, one can pour lemon juice over the salad, and add whatever oil and salt may be necessary.

SALAD DIET No. 84.—Two meals daily of lettuce, tomatoes, turnips or carrots, mixed together and chopped fine; add dressing in accordance with desire, after which flavor with small quantity of grated cheese. One can make an entire

meal of this combination, varying the ingredients in accordance with taste. For instance, if one is fairly hungry the amount of turnips or carrots may be increased with a view of giving proper bulk to the meal.

SALAD DIET No. 85.—Two meals daily of watercress and whole-wheat bread and butter, the watercress to be masticated with the bread and butter.

SALAD DIET No. 86.—Two meals daily of lettuce and tomatoes; flavor with a small quantity of onions chopped fine, adding lemon juice and olive oil if desired. It may be eaten with hard whole-wheat bread or crackers.

SALAD DIET No. 87.—Select any combination salad that is especially craved; add from one to three ounces of nuts that are especially appetizing. Eat with whole-wheat bread and butter or hard crackers; two meals only.

COOKED DIETS.

Various cooked diets are recommended because of their simplicity, and their lack of variety, since, as a rule, one can secure far better results by avoiding elaborate dietetic combinations. The more nearly one confines his meal to one or two articles of food such as he especially craves, the more easily digestion and assimilation will be carried on, and the more satisfactory the results will be.

Exercise care, when cooking food, to avoid the usual mistake of cooking at too high a temperature, and of continuing the cooking process far beyond the period of time required to bring out the flavor, which is the principal object desired in cooking. As a rule it is better to avoid cooking food to the consistency of mush, unless one is desirous of making a soup, and, even under such circumstances, boiling should be avoided as much as possible. Prolonged boiling not only destroys important elements of nourishment contained in the food, but at the same time very materially affects the flavor. It to a certain extent mars the appetizing characteristics that the food may possess.

Another thing: be sure to avoid pouring off valuable

nourishing elements; for example, when potatoes are boiled the water should not be poured off, but just enough of it should be used to boil the potatoes; in other words, when the potatoes are done the water should be all boiled away, the potatoes retaining the nourishing or appetizing elements that may have been absorbed by the water in the boiling process. It may be well to add that boiling is not by any means the best method of cooking potatoes. Baking is perhaps the most wholesome of all methods of cooking them.

When the patient is unable to masticate food properly the soup diets herein mentioned will be found especially satisfactory. They will put the stomach in a condition where apparently it will be easy to digest food, and, though one may lose a certain amount because of the need of saliva in the mixture, at the same time the food is reduced to minute particles, and the digestive juices are able easily to carry on their particular processes.

SOUP DIET No. 88, LEGUME SOUP.—Two meals a day of moderately thick soup made from peas, beans and lentils. No bread or any other kind of food should be used in connection with this diet. This soup should be prepared by allowing the legumes (in the form of dried peas, beans or lentils) to soak over night in cold water; the next morning they should be allowed to boil for one minute, after which they should be put aside to soak for twenty-four hours. They should then be simmered for from six to ten hours—not boiled, please note. If they are not sufficiently softened after this prolonged simmering process, they can be boiled for a few minutes. Previously to this last boiling process one could add a small quantity of onions, chopped very fine, butter or olive oil, and a little milk if desired, and salt to taste. When this soup has been prepared it can be kept in a refrigerator and heated as desired, though it should be made fresh every two or three days.

SOUP DIET No. 89, CEREAL SOUP.—This consists of soup made from any of the flaked or whole grains, wheat, oats, barley or rye, soaked for several hours or over night, and then

simmered several hours to the proper degree of softness. Butter or olive oil and chopped onions should be added to the mixture a short time before the cooking process is completed. Wheat and rye will, of course, require considerably more cooking than barley or oats in order to reduce the grains to the proper consistency. Any of these grains, however, makes a very palatable soup, if prepared in accordance with directions. One should eat three meals a day of this soup in accordance with the appetite. The appetite can be fully satisfied at each meal.

SOUP DIET NO. 90, VEGETABLE SOUP.—Chop up raw vegetables of various kinds that can be conveniently secured. Potatoes, carrots, onions and tomatoes make a fairly good combination. For instance, two parts potatoes, one part carrots, one part tomatoes and one part onions, will make a soup that is especially appetizing. Leave the outer skin on potatoes, carrots and tomatoes, and peel the onions. These soups, please remember, should not be boiled, but simmered for several hours. When the potatoes have assumed the proper degree of softness, the combination is ready to serve. Whatever combination may be used in vegetables, be sure to make onions part thereof, as they give a piquant flavor to the combination. Three meals a day of this combination should be taken in accordance with the appetite. The appetite can be fully satisfied at each meal, though one should not eat unless he is thoroughly capable of enjoying the food.

SOUP DIET NO. 91, SALAD SOUP.—Equal quantities of spinach, onions, watercress, celery and tomatoes chopped fine; simmer for several hours; boil a few minutes before serving; add olive oil or butter and salt to taste; eat three meals a day of this combination. When you cannot secure the special articles mentioned, almost any kind of "green stuff" that is ordinarily used for salads may be used instead.

COOKED DIET NO. 92.—Two meals daily selected from the soups mentioned, with whole-wheat bread and butter, or hard whole-wheat crackers.

DIET NO. 93.—Two meals a day of soup selected from

previous diets, with whole-wheat bread and butter and sweet fruits as desired.

DIET No. 94.—Two meals a day of soup, rice, whole-wheat bread and butter, and sweet fruit, in accordance with the desire. The rice should be prepared as follows: Place the quantity of rice desired in a vessel; add four times the amount of cold milk; add two tablespoonfuls of olive oil for every half pound of dry rice; place on stove; bring to a boil, and allow to boil for five minutes; set aside, and allow it to swell for half an hour or an hour; boil one or two minutes just before serving it, if it is not sufficiently softened.

DIET No. 95.—Two meals daily of soup, salad, whole-wheat bread and butter, and sweet fruits or honey, in accordance with the desire.

VEGETABLE DIETS.

DIET No. 96.—Two meals of baked potatoes and baked whole onions, both to be combined and chopped together after baking; add butter or olive oil; use peelings of potatoes.

DIET No. 97.—Two meals of baked potatoes with butter, cream or olive oil, eaten with triscuit and milk.

DIET No. 98.—Two meals daily of tomatoes, baked sweet potatoes, bread and butter.

DIET No. 99.—Two meals daily of rice, as prepared in diet No. 94, baked beans, bread and butter.

DIET No. 100.—Two meals daily of cheesed onions and potatoes, salad, bread and butter.

CEREAL DIET No. 101.—Two meals a day of grape-nuts and milk, one-quarter to one-half package to be used at each meal. Take as much milk as may be desired mixed with the grape-nuts.

CEREAL DIET No. 102.—Two meals daily of shredded wheat biscuits and sweet fruit, adding cream, and drinking milk with meal as desired. Raisins, figs, dates or bananas may be used as sweet fruits on this regimen if desired.

THE EXCLUSIVE MEAT DIET.

Though I have long been convinced of the superiority of the vegetarian diet in all ordinary cases, yet I have always maintained an open minded attitude upon this as upon all other subjects, open to conviction upon the presentation of any new truth. And though I still believe firmly in the advantage of the vegetarian diet, without excluding milk, eggs, butter and products of this kind, yet I am free to admit that there are occasions in which the use of meat is of distinct advantage. There are conditions of lowered vitality and defective assimilation in which radical and rapid results can be accomplished by some form of animal food which is easy to digest and assimilate, and which will build up the patient more quickly than any other method. In some such cases the milk diet will accomplish results truly marvelous, but in others there is nothing so effective as an exclusive diet of beef, properly prepared and administered. Of this I have been convinced both by experiment and experience. In the following paragraphs I am giving in a concise form the theory and practice of the so-called "Salisbury Exclusive Meat Diet."

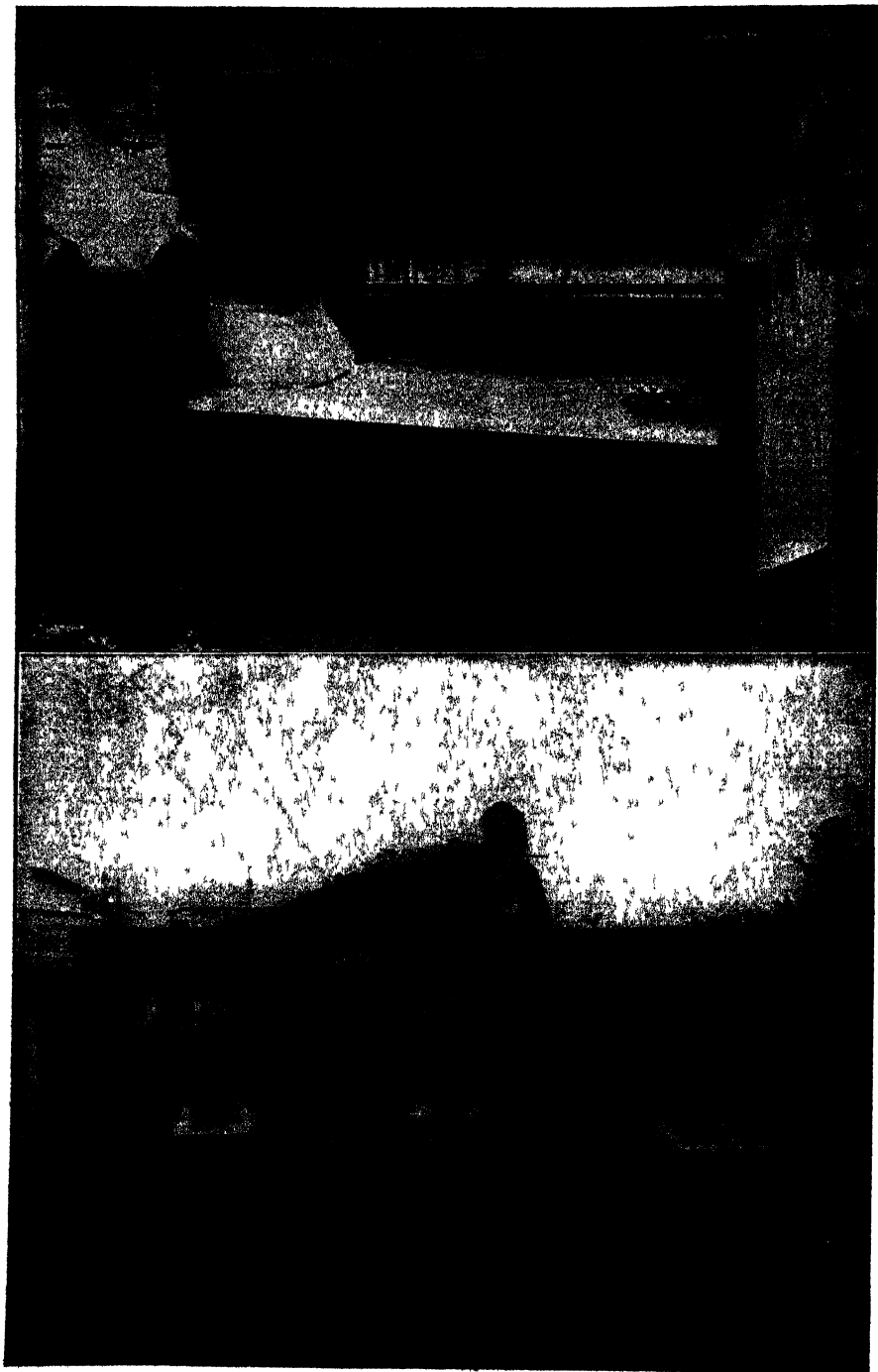
It should be said that this diet was originally developed especially as a cure for pulmonary tuberculosis, which will explain the repeated references made to this disease. It should be understood, however, that the same diet and method of taking it, including the combined use of hot water, will often be of equal value in connection with other diseases, or any weakened condition due to poor assimilation and general loss of vitality.

For many years it has been the fashion for some physicians to prescribe "extract of beef" to those who were in an enfeebled condition or who were recovering from a severe illness. It was claimed that the extract contained all the elements of the beef in concentrated and easily assimilated form. And the fact that the name of the great chemist, Liebig, was attached to the original extract of beef led both physicians and laymen to believe in its value.

While there is a small amount of nutriment in the extract, actual experiments have shown that one can live almost as well on simple hot water. Its chief advantage, or seeming advantage, consists in the stimulating, rather than the nutritive effects of the beef. But later chemical research has shown that there is possible danger in the presence of the concentrated results of metabolism in the animal from whose flesh the beef extract was taken. Its use, therefore, has largely been discontinued. Wherever a healthful stimulus that is also a food seems to be called for by the system, there is nothing equal to grape or other fruit juices. And in all references to the Exclusive Meat Diet, the reader will accordingly understand that we never have references to any form of prepared "Beef Tea" or "Extract of Beef."

One writer gives the following explanation of the conditions which call for an exclusive meat diet, and while we do not agree with all of his conclusions, yet there is also some truth in his remarks:

"Experiments have shown that man can exist and thrive indefinitely on lean beef pulp (defibrinated beef), and hot water. The stomach is purely a lean meat digesting organ. When too much food from the vegetable kingdom is eaten, the bile is sent to the stomach to digest it. It is the peculiar office of the bile to digest vegetable food. When bile is detected in the stomach, the condition is called 'biliousness,' but it is merely an effort of nature to right a physiological wrong done. The vegetable food and the fibrous connective animal tissues in excess in the stomach undergo fermentation. Carbonic acid gas, alcohol, and after a time acetic acid (vinegar), are developed by the growth of the alcoholic and vinegar yeasts feeding on the vegetable food and animal connective tissues, in the alimentary canal and stomach especially. These cause, by the action of the carbonic acid gas mainly, a paralysis of the stomach, also the formation of animal tissues in the condition of partial weakness and death, as seen, for example, in the thickening of the large intestines in chronic diarrhœa. The diarrhœa that accompanies these conditions is due to the catarrhal pour-



Suggestions for outdoor sleeping accommodations. The upper design is particularly adapted to winter use.

ing forth of acid and other yeasts, and in the end establish a clear case of consumption, in which there is partial paralysis and interstitial death caused by the mycoderma aceti and other acid yeasts growing in the blood, making thrombi (masses of fibrin in which are consolidated both white and red corpuscles, crystalline and pigmentary bodies, spores and mycelial filaments or vegetations, one or all), these thrombi becoming embolisms (plugs in the blood vessels), of the lungs, and these embolisms are the nidus or tubercle.

"This demonstrates that tubercles, or tubercular deposits are not the beginning of the disease, as is thought by many persons. They do not appear until the third stage of the disease is reached and are well advanced before any positive indications can be detected by the use of the stethoscope.

"The superiority of the Salisbury method of diagnosing disease by microscopical examinations of the blood, urine, feces and skin, together with chemical examinations of the urine, will be apparent when it is known that not only can the present physical condition of a consumptive be determined with scientific accuracy, but the pre-tubercular stages can be detected in persons who think themselves to be in a healthy condition. This foretelling of the impending disease gives one time in which to change the method of living and adopt a diet which will, while starving out the incipient fermentative growths in the stomach and intestines, at the same time supply the system with food which will be the most easily digested, readily assimilated and strengthening in character.

"Salisbury, the discoverer of the meat and hot water system of treatment for consumption, began the study of germ disease in 1849, having been for some years engaged in the exact sciences of chemistry, botany, geology, zoology and mineralogy. He began the practice of medicine in 1850, and was immediately struck with the fact that there was an entire want of medical knowledge as to the cause of disease. From this time onward, his attention was largely directed to the discovery of the cause of disease. His previous study of the germination and growth of cryptogamic and fungoid plants led him to the

discovery of the causes of consumption. He says 'Consumption is produced by certain and too exclusive feeding upon the various preparations of grains, vegetables, sweets and fruits, and the products developed by their fermentation. When fed too exclusively upon these fermentable foods, the over-taxed stomach and bowels are unable to digest them; alcoholic and acetic fermentation set in, and the digestive apparatus is soon clogged with yeast vegetations and the enervating and poisonous products developed by their growth.'

"The progress of the disease is divided by Salisbury into three well marked periods, the first being confined exclusively to the digestive organs. 'The disease is confined to the bowels till the mucous surfaces become so paralyzed, under the influence of carbonic acid gas (constantly present), that the cells lose their normal selective power when the minute plants belonging to the genus mycoderma begin to be "gobbled" up with the vinegar and carbonic acid gas, all of which now have a free and quite unobstructed pathway into the blood stream. The passage of these products into the blood marks the beginning of the second stage of consumption.

" 'As the second stage advances, the yeast masses (mycoderma), are by degrees larger and more numerous, till the third stage is initiated by the blocking up of the capillary vessels and follicles with tubercular depositions. Tubercle is produced in the capillary vessels by aggregations, or embryo of yeast spores (mycoderma), which become so large as to block up these vessels, forming a nucleus around which accumulate sticky colorless corpuscles, fibrine filaments and more yeast spores; in the follicles and air cells of the lungs it is induced by aggregations of yeast spores (mycoderma), and connective tissue cells and fibers.

" 'The fourth stage is one of interstitial death and decay. The breaking down is now going on faster than the building up of the system, and unless this process can be checked by such feeding as can be assimilated, and make blood faster than it is being wasted, the patient will soon die.' "

In the Salisbury method of diagnosis, the greatest reliance

is placed on the use of the microscope. Under the slide of the microscope, a drop of the patient's blood is placed from day to day, and its condition or appearance registers the progress of the disease. In addition to this, any infraction of the rules or direction of the physician by the patient can be detected by the physician, since the eating of even a few mouthfuls of food, other than that prescribed for the treatment will be indicated within a few hours by an increased fermentative condition of the blood and urine. In carrying out this method of treatment, close watch is kept over the kidneys, through a chemical analysis of the urine, taking as a sample, that first passed in the morning, and noting its specific gravity, which should stand from 1.015 to 1.020, the patient passing from three pints to two quarts in twenty-four hours. When the condition of the system has been so far improved that the urine will stand constantly at a specific gravity of 1.020, and flow at the above rate daily, the diet may safely be extended to take in broiled oysters, or raw, with lemon juice, broiled fish, free from fat, and an occasional soft boiled egg at breakfast.

"The treatment consists of taking about four pints of hot water per day, and the absolute restriction of the diet to minced beef.

"Minced beef is used for the following reason: Consumption (tuberculosis), claims Dr. Salisbury, is caused by fermentation of food in the stomach, and the cure consists in excluding those foods which ferment, and confining the diet to the most nutritious as well as most easily assimilated food, beef being the best. Broiled round steak, from the third to the sixth cut, is preferred, as being the most nutritious and having the least waste in the form of fat, bone, or any undesirable tissues.

"The best preparation for broiling is as follows: Remove the round bone, together with the outer rind of tissue and fat, also the tough fibers running through the beef, then cut into pieces small enough to go into a meat grinder and reduce the whole to a pulp. If one has no meat grinder, then

the beef can be chopped in a tray, but care must be used that there be no stringy fibers left in the pulp. Shape the beef into a compact layer, not over three-quarters of an inch in thickness, using the edge of the knife to avoid pressing the beef into a livery, soggy mass. When ready to broil, slide from the plate onto a close meshed wire broiler, and cook over live coals or bright blaze until done through—the redness of the meat gone—when it should be served hot, with salt and butter to taste. Salt after cooking, as salt applied before cooking hardens the beef. Use no sauce having vegetable base, or made with vegetables or vinegar, these latter tending directly to increase the fermentation in the stomach. Never fry the beef. If it is not convenient for one to broil the beef over coals, or a bright blaze, then a spider or frying pan may be used, if it is allowed to get very hot before sliding the beef into it from the plate. When ready to turn, put the plate over the beef and turn all over and slide the beef again into the spider, uncooked side down and finish cooking.

“A well balanced meal consists of the following: Seven mouthfuls of beef to one of toasted bread or boiled rice, whole-wheat bread being preferred to white flour, which has been deprived of some of its most desirable qualities.

“The following are the reasons why the connective fibrous tissues are removed from the beef pulp:

“First. Because they are subject to fermentation and produce carbonic acid gas, the same as food from the vegetable kingdom does.

“Second. Because fibrous tissues of animal food are special food for animal fibrous tissues.

“Third. Because the pulp acts by starving out the fibrous connective glue or colloid tissues.

“Fourth. Because experience shows in hundreds of cases that fibrous growths in from one to three years are removed more or less completely, and because a return to animal food which retains the connective fibrous tissues will be followed by the return of the diseased fibrous growths in the trespasser.

"Fifth. Because the beef pulp is not subject to the acetic fermentation and the evolution of carbonic acid gas, and hence it does not cause diseases of fatty degeneration and paralysis, which the absorption of carbonic acid gas produces.

"Sixth. Because the advantages of chopped defibrinated beef when broiled are:

"(a) Its easy digestion.

"(b) Its rapid absorption.

"(c) Its forming all the body tissues in a healthy manner.

"(d) Its being a speedy builder-up of the blood.

"(e) Its clearing out abnormal vegetations from the blood and urine.

"(f) Easy to swallow.

"(g) Usually acceptable to the palate.

"(h) Even when administered against the appetite, it has saved life.

"(i) It is never too heavy or too rich a food for the weakest patient, as ordinarily thought.

"Seventh. When liquid foods alone can be taken, beef essences and teas should be made from beef freed from the connective fibrous tissues."

At this point I would say that I disagree with this authority in regard to the use of beef essences and teas, made even from the beef freed from the connective fibrous tissues. Properly prepared, the above diet of broiled minced round steak is comparatively easy to digest, but if the patient is not in a condition to take anything but liquid food, I would not advise the use of beef teas or essences. In practically all such cases the exclusive milk diet as described elsewhere would be more satisfactory and more effective.

In connection with the exclusive meat diet, the drinking of hot water is invaluable. One authority gives the following instructions on this point:

"In all cases where food does not readily digest and become assimilated, it lies in the stomach, ferments and produces carbonic acid gas and alcohol. For the elimination of the acetic

and alcoholic fermentation products, there is nothing so effective as hot water, and there is no danger of one's drinking it too freely.

"Second only to defibrinated beef as a cure for consumption, therefore, is the drinking of hot water, which should be taken at a temperature of about one hundred and fifty degrees (150°), Fahrenheit, or as hot as it can be comfortably borne, this temperature varying with different individuals. As simple as this remedy may seem at first thought to be, there are many considerations that should be given to its use, the following directions being explanatory and important:

"First. The drinking of hot water excites downward peristalsis of the alimentary canal. Cold water depresses, as it uses animal heat to bring it up to the temperature of the economy, and there is a loss of nerve force in this proceeding. Lukewarm water excites upward peristalsis or vomiting, as is well known. In cases of diarrhœa, the hotter the better. In cases of hemorrhages the temperature should be at a blood heat. Ice water is disallowed in all cases, sick or well.

"Second. Quantity of hot water at a draught: Dr. Salisbury began with one-half pint of hot water, but found it was not enough to wash out nor to bear another test, founded on the physiological fact that the urine of a healthy babe suckled by a healthy mother (the best standard of health), stands at a specific gravity varying from 1.015 to 1.020. The urine of the patient should be made to conform to this standard, and the daily use of the urinometer tells whether the patient drinks enough or too much hot water. For example, if the specific gravity of the urine stands at 1.030, more hot water should be drunk, unless there is a loss by sweating. On the other hand, should the specific gravity fall to 1.010, less hot water should be drunk. The quantity of hot water varies usually from one-half to one pint, or one and a half pints at one time of drinking.

"The urine to be tested should be the *urina sanguinis*, or that voided just after rising from bed in the morning before any meals or drinks are taken.

“The quantity of urine voided in twenty-four hours should measure from forty-eight to sixty-four ounces; three to four pints. The amount will, of course, vary somewhat with the temperature of the atmosphere, exercise, sweating, etc., but the hot water must be given so as to keep the specific gravity to the infant’s standard, to wit, 1.015 to 1.020. The urinometer will detect at once whether the proper amount of hot water has been drunk, no matter whether the patient is present or absent. Another test is that of odor. The urine should be devoid of the rank ‘urinous’ smell, so well known but indescribable.

“Third. Times of taking hot water: One hour or two hours before each meal, and half an hour before retiring to bed. At first the time of one-half hour before meals was tried, but this was apt to be followed by vomiting. One hour or two hours allows the hot water time enough to get out of the stomach before the food enters or sleep comes, and thus prevents vomiting. Four times a day gives an amount of hot water sufficient to bring the urine to the right specific gravity, quantity, color, odor and freedom from deposit on cooling. If the patient leaves out one dose of hot water during an astronomical day, the omission will show in the increased specific gravity, as indicated by the urinometer in the color, etc. Should the patient be thirsty between meals, eight ounces of hot water—half a pint—can be taken any time between two hours after a meal, and one hour before the next meal. This is to avoid diluting the food in the stomach with water.

“Fourth. Mode of taking the hot water: In drinking the hot water it should be sipped, and not drunk so fast as to distend the stomach and make it feel uncomfortable. From fifteen to twenty minutes may be consumed during the drinking.

“Fifth. The length of time to continue the use of hot water: Six months is generally required to wash out the liver and intestines thoroughly. As it promotes health, the procedure can be practiced by healthy people throughout life,

and the benefits of cleanliness inside be enjoyed. The drag and friction on human existence, from the effects of fermentation, foulness, and indigestible food, when removed gives life a wonderful elasticity and buoyancy, somewhat like that of the babe above alluded to.

“Sixth. Additions to hot water: To make it palatable, in case it is desired, and medicate the hot water, aromatic spirits of ammonia, clover tea blossoms, ginger, lemon juice, sage, salt and sulphate of magnesia are sometimes added. When there is intense thirst and dryness, a pinch of chloride of calcium or nitrate of potash may be added to allay thirst and leave a moistened film over the parched and dry mucous membrane surfaces. When there is diarrhœa, cinnamon, ginger and pepper may be boiled in the water, and the quantity drunk lessened.*

“Seventh. Amount of liquid to be drunk at a meal: Not more than eight ounces—half a pint. This is in order to not unduly dilute the gastric juice, or wash it out prematurely, and thus interfere with the digestive processes.

“Eighth. The effect of drinking hot water, as indicated, are the improved feelings of the patient. The feces become black with bile washed down its normal channel. This blackness of feces lasts for more than six months, but the intolerable fetid odor of ordinary feces is abated, and the smell approximates the odor of healthy infants suckling healthy breasts, and this shows that the ordinary nuisance of fetid feces is due to a want of washing out and cleansing the alimentary canal from its fermenting contents. The urine is clear as champagne, free from deposit on cooling, or odor, 1.015 to 1.020 specific gravity, like infant's urine. The sweat starts freely after drinking, giving a true bath from center of body to periphery. The skin becomes healthy in feel and looks. The digestion is correspondingly improved, and with this improvement comes a better working of the machine. All thirst and dry mucous membranes disappear in a few days, and a moist

* The writer quoted here recommends drugs to counteract constipation should this condition ensue.

condition of the mucous membranes and skin ensues. Ice water in hot weather is not craved, and those who have heretofore drunk ice water freely, are cured of the propensity. Inebriety has a strong foe in this use of hot water.

“Ninth. Summary of general considerations on the therapeutic drinking of hot water:

“(a)—Foundation for all treatment of chronic diseases.

“(b)—Excites downward peristalsis of the alimentary canal, washes down the slime, yeast and bile through its normal channels—washes out the liver and kidneys, and the bile is eliminated through the bowels, and not through the blood via the kidneys.

“(c)—Relieves spasms or colic of the bowels, by applying the relaxing influence of heat inside the alimentary canal, just as heat applied outside the abdomen relieves.

“(d)—Dilutes the ropy secretions of the whole body, and renders them less adhesive, sticky and tenacious.

“(e)—Inside bath.

“(f)—Dissolves the abnormal crystalline substances that may be in the blood and urine.

“(g)—Necessary to have the hot water out of the stomach before meals.

“(h)—Use is to wash down the bile, slime, yeast and waste, and have the stomach fresh and clean for eating.

“(i)—Promotes elimination everywhere.

“(j)—If objection is made, it must be remembered that we are seventy-five per cent. water.

“(k)—The gas that sometimes eructates after drinking hot water is not produced by the hot water, but was present before, and the contractions of peristalsis ejects it; or, sometimes it is that the air is swallowed in sipping, as horses suck air. The amount of gas contained in the alimentary canal is larger than most are aware of, and yet it is not excessive, as it takes some time to eruct a gallon of gas from the stomach. This length of time can be tested by submerging a gallon jug filled with air under water and observing how long it will be in filling with water.

“(l)—Some physicians have advised against hot water, on the ground that it would ‘burn the coating off the stomach.’ If this is so, then a denudation of the lining of the stomach continuously for over fifty years is compatible with a state of otherwise perfect health, with no sign of illness for that period of time, and is also compatible with the numerous cases that have occurred under the use of hot water as a foundation for treatment during the past fifty years. Again, the same physicians drink tea and coffee, at the same temperature; and this act belies their warning and shows their inconsistency and want of consideration before speaking.

“(m)—These dicta about the therapeutic drinking of hot water were founded on the physiological experiments at the outset, verified in pathology and based on the experience derived from the treatment of thousands of cases since 1858. They are open, so that all who will may partake of this ‘water of life’ freely.

“Tenth. Personal estimate of the founder of this practice: Dr. Salisbury, after having drunk the hot water for thirty years said: ‘If I were confined to one means of medication, I would take hot water.’ He continued drinking it up to the time of his death, a few years since. This testimony to the therapeutic value of hot water is corroborated by Dr. Ephraim Cutter, of New York, who has himself drunk it and also used it in his practice for forty years.”

From the large correspondence and many questions asked as the results of our publication of articles upon this subject in *Physical Culture*, the writer we have quoted later gave the following brief summing up as to what the Salisbury treatment is and what it is not:

“First. It is not the eating of raw beef, or raw meat, of any kind.

“Second. It is not the drinking of beef’s blood, nor the taking of the blood in any form other than as it is to be had in the beef and this always cooked.

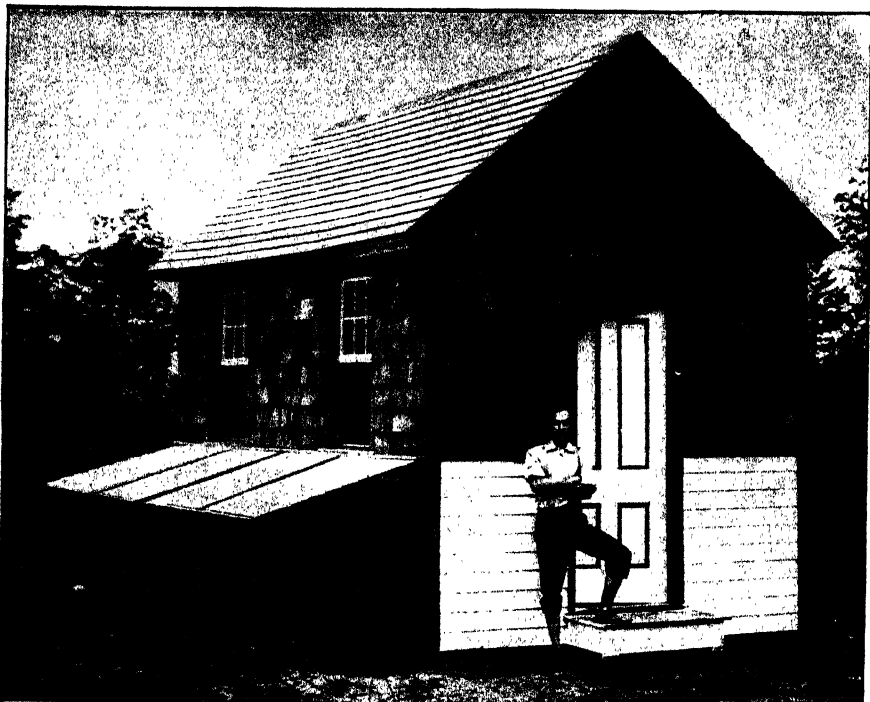
“Third. It does not mean beef cooked so rare as to be raw

inside; this would be eating raw beef. The meat should be done through, but not cooked up dry, nor burned.

"Fourth. It does not mean the patient can satisfactorily 'try-out' or test the value of the beef diet, by eating some kind of meat daily, or some at each meal; or beef at each meal, together with fruit or vegetables. It has happened more than once, after stating clearly to the patient, 'You must eat lean, broiled beef only; you must confine yourself (for a short time at least, to get well started), to lean, broiled beef exclusively,' that the patient would say: 'I can have some potatoes with the beef, can I not? Potatoes and meat go together, don't they?' Now potatoes are amylaceous food, and the Salisbury method of treating consumption and kindred diseases (which are caused largely by the fermentations of such starchy foods), is to starve the growth by cutting out those foods known to ferment and confining the diet to food having the least fermentative tendency, yet possessing the most nutrition.

"Fifth. The Salisbury method does not require that one having recovered his health from having followed this plan, must ever after live exclusively upon lean beef. He can return to any normal and rational mode of diet as advocated in these pages, this continued health will show him the perfection of his cure.

"To briefly recapitulate: The best results are had by dieting the patient for twenty-four hours, accompanying this by giving one-half pint of hot water four times daily, to wash out stomach, intestines, kidneys, etc. Follow with giving four ounces of the lean, broiled beef each meal and continue drinking the hot water, not less than one hour before each meal, and not less than half an hour before retiring for the night. Increase the quantity of beef to be eaten, as indications show it to be all assimilated, and increase the quantity of hot water until one pint is drunk before each meal and before retiring. Never drink more at the time of eating than one half-pint of hot water. In the treatment of this and kindred diseases, sugar and sweets in all forms are to be strictly avoided.



A house of this design may be constructed at moderate cost, and will be found an excellent means of enjoying pure, fresh air at all times.

If the instructions given are faithfully followed, the patient should within a few weeks be able to increase the amount of beef eaten up to one, or one and a half pounds a day, and within three months extend the range of diet so as to include raw or broiled oysters—two to six at a meal—with lemon juice (never vinegar), salt, pepper, or sauce to taste. The brown meats of poultry and wild game; lean bits of mutton, deer, a small portion of broiled or boiled fish (codfish toasted and afterwards soaked for a few minutes in hot water and then buttered and peppered, is useful at times in coaxing the appetite), may be resorted to occasionally, but the main reliance must be placed upon broiled beef and hot water.

“Beginning with one mouthful of bread or rice, to seven of beef, the patient can soon increase the amount or proportion of bread to two and three mouthfuls to seven of beef. Get the whole-wheat flour bread if it can be had.

“Remember, the first thing needed by the patient, as it is the first thing needed by the new-born babe, is pure air; the next is pure drinking water and then suitable food. With these, consumption in all its forms has been cured by the Salisbury methods, in thousands of cases, some of them remaining cured for twenty to forty years. And just as this regimen will cure consumption so it will build up those suffering with many other diseases. It is no longer a matter of experiment.”

Elsewhere are given at length quotations from Upton Sinclair's *Experiences in Fasting* and with the *Nut and Fruit Diet*. While he lived out-of-doors doing active physical work he found himself in first-class trim, but, says he: “When I settled down to a sedentary life, and to writing which involved a great nervous strain, I began to lose weight on raw food; and if I kept on with this regimen, I would begin to have headaches, and other signs of distress from what I was eating. As an illustration of what I mean, I might say that quite recently I plunged into a novel in which I was very much absorbed, and I lost twelve pounds in sixteen days; and this, it must be understood, without changing my diet in the

slightest particular. I went on with the work for about six weeks, and by that time I had lost twenty pounds. In explaining this to myself, I was divided between uncertainty as to whether I was working too hard, or whether I was eating too much. Finally I took the precaution to weigh what I was eating, and to make quite certain that I was eating no more than I had been accustomed to eat during periods when I had remained at my normal weight. I then cut the quantity of my food in half (as I told in a previous contribution) and found that I lost much less rapidly. This served to convince me that the trouble lay in the fact that I had not sufficient nervous energy left to assimilate the food that I was taking.

“And I have known others to have this same experience. Bernarr Macfadden, in particular, told me that he could not get along upon the nut and fruit diet while closely confined in his office, and that he found the solution of his problem in milk. Inasmuch as there is nothing that poisons me quite so quickly as milk, I had to look farther for my solution. As a matter of fact, I had been looking for this solution for more than ten years, though it is only quite recently that I had come to understand the problem clearly. It is a problem which every brain-worker faces; and I am sure, therefore, that there will be many who will find the report of my experiments and blunders to be of interest to them. I have tried, under these circumstances, all kinds of the more digestible foods—toast, rice, baked potatoes, baked apples, milk, poached eggs and so on; always I have found that these foods digested perfectly, but they poisoned my system because of their constipating effect; and this was a dilemma which I was never able to get around.

“I now read Dr. Salisbury’s book, ‘The Relation of Alimentation to Disease.’ Many of his experiments I found extremely interesting. Dr. Salisbury described the consequences of the ordinary starch and sugar diet as making a ‘yeast-pot’ of one’s intestinal tract. I found in my own case many of the symptoms which he described, and I determined to see what would be the effect of the meat diet in my case.

"I began the experiment with reluctance. I had lost all interest in the taste of meat, and I had a prejudice against it; I hated the smell of it, and I hated the feeling of it, and I was prepared for the direst consequences, according to the prophecies of my vegetarian friends. I should not have been at all surprised if I had been made very ill by my first meal. I was prepared to allow for that, supposing that after three years I had perhaps forgotten how to digest meat. To my surprise, however, I found no difficulty at all. I soon gave up preparing the meat according to the elaborate prescription of Dr. Salisbury and contented myself simply with eating good lean beefsteak. I continued the experiment for two weeks, living upon meat exclusively. I found that all my symptoms of stomach trouble disappeared, and I had no headaches whatever. I got quite weak upon the exclusive diet, but this was according to Dr. Salisbury's statement; just as soon as I added a little shredded wheat biscuit and dried fruit to the menu this trouble disappeared and I gained in weight with great rapidity and was soon back where I had been before.

"I did not continue the diet, owing partly to distaste for it, and partly to the inconvenience of it. I had accustomed myself to the raw food way of living, and anyone who knows what this means can understand my distaste for washing plates and scraping frying-pans, and going to the bother of getting fresh meat and keeping it and cooking it. Also, of course, there was the item of expense. I described last month a diet upon which one can live and thrive for ten cents a day. I am never accustomed to spending more than thirty cents a day, even when indulging in unlimited fresh fruit. When following the meat diet, and using round steak put through a meat grinder, as Dr. Salisbury recommends, the cost was about seventy-five cents a day; and when I began using sirloin and porterhouse, to save the time and trouble of the grinding, the cost went up to a dollar and a half or two dollars a day. To keep a family upon such a schedule as this would, of course, be out of the question for any except very well-to-do people; and this is an important item to consider in relation to this diet.

"Perhaps I ought also to specify that a good deal of the success of the diet may have been owing to the hot water regimen which is a part of it. An hour or two before every meal one is supposed to sip at least a pint of very hot water, which has the effect of cleansing out the stomach and stimulates peristaltic action to a remarkable degree. I had been accustomed to drink hot water while fasting, but I had never taken it systematically, as I did at this time. It is a trick well worth knowing about."

SPECIAL MEAT DIET REGIMENS.

The following meat diets are especially valuable in cases where the stomach is unable to assimilate milk products. I can truthfully say that I have had a few cases where persons have been saved from death by the meat diet. In these cases every other article of food that by any possible chance might agree with the patient was tested without results. And when the change was made to an exclusive meat diet there was noted a slow but certain improvement.

MEAT DIET No. 103.—Secure a choice cut or ordinary round steak; have the butcher remove all gristle or cartilage, and then macerate or grind the meat as if for a hamburger steak. Place this meat in a vessel in a very small quantity of boiling water, and allow it to simmer until the redness has disappeared. It is then ready to serve. Do not use salt or butter in this diet. Three meals of meat may be eaten each day, morning, noon and night. A half hour before each meal take from a half pint to a pint of water as hot as can be taken without sipping. Take one-quarter of a pound of meat at each meal on the first day; one-half pound at each meal on the second day, and thereafter as much as the appetite craves.

MEAT DIET No. 104.—The same as No. 103, with the exception that salt and butter may be used on the meat in accordance with desires.

MEAT DIET No. 105.—Grind or macerate round steak as described in Diet No. 103. Mould the meat into cakes not

over half an inch thick, and then cook in an ordinary frying pan until the redness has disappeared from the center portion of the cakes. Be careful not to use too much heat, as the cakes should not be browned too much. Use one-quarter pound at each meal the first day; three-eighths of a pound each meal the second day, one-half pound each meal the third day, and as much as the appetite may call for thereafter. Use no salt or butter or condiments of any kind on the meat in this diet. Take two or three meals as the appetite may crave.

MEAT DIET No. 106.—The same as No. 105, allowing the use of salt and butter as desired.

MEAT DIET No. 107.—The same as No. 105, though the meat should be broiled instead of fried. It is better to broil it in an ordinary frying pan under a gas flame, such as is often provided in a gas oven. If the meat is not broiled under the flame, then be careful rapidly to heat the outer parts of the meat cakes so the juices will be retained. Broiling is the best method of preparing meat to make it palatable. Do not use salt or butter in this diet.

MEAT DIET No. 108.—Same as No. 107 though salt and butter may be added to the meat in accordance with the desire. From one to two hours before each meal the patient should also drink approximately one pint of hot water, sipping it, at a temperature of 150 degrees F. or as hot as comfortable. The same should be taken an hour before bed time. Not more than one cup of hot water should be used at each meal, unless the thirst urgently calls for more. In case of hemorrhage from the lungs, water at 100 degrees F. or slightly above blood temperature should be used. After some weeks or months, or following great improvement, a little whole-wheat bread or boiled rice may be used with each meal, but not much. This regimen is of value in consumption, chronic rheumatism and some other severe disease conditions.

MEAT DIET No. 109.—Broil meat as described in Diet No. 107; add salt and butter to taste, and one or two slices of bread to which butter can be added, if desired.

MEAT DIET No. 110.—Broil meat as in No. 107. A small quantity of rice may be taken with the meat. This rice should be prepared as follows: Use unpolished rice whenever it can possibly be secured. It is far more nourishing and better food in every way. Place in a vessel the quantity of rice desired for the meal, and four times as much cold milk as rice; heat the mixture and allow it to simmer or quietly boil five minutes; then set it aside and allow the rice to 'expand'; it should be ready for serving in half an hour to an hour thereafter. When rice is prepared in this way it does not assume a soft, mushy consistency. If the grain is not moistened and sufficiently expanded it can be brought to a boil with a little additional milk just before serving.

MEAT DIET No. 111.—Broil the meat in accordance with instructions in Diet No. 107. A small piece of bread may be eaten with the meat. After eating the meat, eat whatever quantity of rice you may desire, prepared as described in the above special recipe, to which pure honey may be added in accordance with desire. If the patient has a strong craving for sweets he need not be alarmed about the digestibility of honey; in fact, it will really assist many stomachs in the digestion of the rice and meat. After testing the appetite a few meals on this diet, one can fairly well satisfy his craving with little or no danger of unpleasant after effects. In this diet raw onions may be eaten with the meat instead of bread, if desired.

MEAT DIET No. 112.—This is of somewhat the same character as the preceding regimen, though not so strict, and adapted to conditions somewhat less serious than those which require the most radical measures. Instead of confining the diet to the minced round steak, porterhouse or sirloin may be used as well, without grinding, but preferably always broiled. Roast beef or lamb may also be used, as well as broiled fish, chicken or other poultry and game, avoiding the fats and connective tissue as much as possible. In this regimen, also whole-wheat bread, shredded wheat or boiled rice may be used a little more freely, but in bulk less than that of the meat,

and without sugar in any form. Pure lemon-juice may be used as desired, together with grapes, oranges, apples, pine-apples and other similar fruits or their juices. The hot water drinking should be persisted in, as in the preceding regimen.

MEAT DIET No. 113.—This diet is suited to patients of fair vitality and moderately good digestion who have been accustomed to the extensive use of meat all of their lives. In many such cases, the attempt to make a sudden change to a vegetarian regimen has the effect of reducing weight and lowering vitality. In this regimen, therefore, meat is used either once or twice each day, once upon the two meal plan, either once or twice upon the three meal plan, using beef chiefly, but including chicken, fish, lamb, mutton or other meats according to the taste and appetite. Broiling and roasting should be the methods of preparation, broiling preferred. This allowance of meat may be combined with a regular wholesome diet, excluding pastries, all white flour products and permitting no sweets at all, except honey and fruits, both dried and fresh. The more nearly the balance of the diet consists of uncooked foods, in this regimen, the better. The combination of hot water drinking with this diet, as in the preceding meat diet regimens, will be advantageous in many cases, but is not necessary. Milk and eggs may also be used freely in this diet, though using a larger amount of fruit if these dairy products are consumed in any quantity. In each of these diets it is well to add an abundance of one green raw vegetable as lettuce, celery or tomato, each day.

GENERAL DIETS.

DIET⁷ No. 114.—*Breakfast:* Two to four ounces of raisins, eaten dry, seed and all to be swallowed.

Lunch: Choice of one vegetable, bread and butter; one kind of sweet and one kind of acid fruit if desired, from recipes given.

Dinner: Soup, one vegetable, bread and butter; rice pudding or boiled rice and honey.

DIET No. 115.—*Breakfast:* Two to four ounces of raisins, eaten with from one to two pints of milk.

Lunch: One kind of vegetable, bread and butter, custard or other simple dessert; a cup of postum or cereal coffee to be taken at the completion of the meal. An egg can be taken with this coffee, to be prepared in the following manner: beat the egg in a cup; add small quantity of milk or cream; beat again; pour slowly and stir in boiling coffee, sweeten with honey to taste; sugar can be used, but honey is more wholesome.

Dinner: Soup, as desired, from previous recipes. Baked potatoes, one vegetable, rice pudding or other simple dessert. Egg coffee or cocoa. The egg as described in previous recipe can be prepared either in cocoa or coffee as desired.

DIET No. 116.—*Breakfast:* Raisins and almonds, or any other nuts that might be palatable, taken with or without milk.

Lunch: Any soup selected from previous recipes; rice boiled in milk with grated cheese. Simple dessert, sumik or buttermilk.

Dinner: Soup selected from previous recipes; cheesed onions and potatoes; salad, dessert, cereal coffee with or without egg.

DIET No. 117.—*Breakfast:* Acid or sweet fruit, or both fruits combined, with milk in accordance with the desire.

Lunch: Eggs cooked as desired; one vegetable, coffee or cocoa.

Dinner: Soup selected from previous recipes. Baked macaroni or spaghetti, one vegetable; rice pudding or other simple dessert. Cereal coffee or cocoa.

DIET No. 118.—*Breakfast:* Raisins and nuts.

Lunch: Soup selected from previous recipes; one or two vegetables; watercress, lettuce or tomato salad flavored with chopped onions. Sumik, buttermilk or cereal coffee.

Dinner: Soup selected from previous recipes; eggs any style desired; one or two vegetables; salad as desired; one

simple dessert; cereal coffee or cocoa, with egg as given in previous recipe, if desired.

VITALITY BUILDING REGIMENS FOR GENERAL USE.

In the following regimens are set forth general instructions for increasing the vital strength and general vigor of the body, with suggestions for additions to the regular treatment which in Volume IV of this work will be specially indicated in connection with each disease. These regimens also include suggestions as to changes in treatment as the symptoms and strength of the patient vary.

The methods to be used in adding to the vital strength of the patient are to a certain extent similar in nearly all cases. It is, therefore, hardly necessary to describe a special vitality building regimen for each disease. And furthermore, if we should attempt to prescribe a regimen of this kind it would still be necessary to consider carefully the strength of the patient, for it is easy to understand that a very weak patient would require an entirely different prescription to one who is moderately strong.

For the purpose of guiding my readers, therefore, I am presenting herewith several Vitality Building Regimens adapted to varying conditions of weakness and strength. Unless other instructions are given differing from that which you will find in these General Vitality Building Regimens, the instruction given herein should be followed, adapted to the strength of the patient, in addition to the special treatment advised, though do not forget my many warnings against giving too much treatment.

After carefully reading the detailed instructions in Volume IV on the particular disease to be treated, additional treatment or exercises may be selected to apply to the particular case in hand as a means of increasing the efficiency of the treatment suggested.

You will note that I am prescribing regimens for those who can be classed as strong. Many of my readers may won-

der at this, as it is the general impression that everyone who is strong is in good health. As a rule this is true, though very often one possessing unusually strong muscles will pass through experiences that will bring about a disease of some kind, and though such individuals are not nearly so likely to be attacked, nevertheless they are occasional sufferers. It is important, however, for one possessing unusual strength to follow a regimen adapted to his particular muscular vigor. For instance, if he is muscularly developed and is trying to build up vitality, and neglects the exercises which are essential to actively use his muscular system then he can rest assured that he cannot possibly gain rapid results.

The regimens that I have outlined for those possessing unusual strength are, of course, to be followed in connection with any other special treatment advised in each case.

In the various regimens advised for those who are confined to bed, or who are classed as weak, you will sometimes find methods prescribed that will more or less differ from, or conflict with those that are advised in the special treatment of some acute disease. You must remember that in prescribing for acute diseases we have to suggest only those remedies that can be followed safely in practically all cases regardless of the strength of the patient.

These General Vitality Building Regimens will not only give you definite instructions for the treatment of persons of varying strength, but they will also suggest to you the various changes in treatment that must be made as changes in the symptoms and strength of patient occur.

To avoid the possibility of giving the patient too much treatment, which in some cases might be dangerous, I would advise that only two or three treatments in which water is used, and which require a definite recuperation should be given daily. For instance, if you give an abdominal pack at one time during the day, and the spinal pack at another time, you might assume that these should be all the hydropathic treatments that should be given during one day. If you were to apply a wet sheet pack, which is a treatment requiring

decided recuperation throughout the entire body, remember that no additional treatment that would especially tax the recuperative powers should be given during that day. The wet sheet pack could be given during one part of the day, and Physcultopathic treatments, or spinal stimulation, could be given at another part, though by all means avoid the mistake of over-treating the patient. In many cases too much treatment is far worse than none at all. Remember the potency of these methods. A moderate amount of treatment will go a long way.

The patient should be encouraged at all times to drink freely of water. One of the most serious mistakes made in connection with very weak patients is the neglect to supply a sufficient quantity of fluids properly to liquify the blood. This water can be flavored with lemon or other fruit juices, if desired, or honey or salt could be used if the patient finds it more pleasing to take in this manner. A little flavoring may help him to consume a proper quantity.

Whatever ailment you are treating you should look over this list and find a case, the description of the degree of strength of which very nearly approximates that of the one which you are treating, and you should then add whatever general vitality building treatment the patient can definitely recuperate from.

Unless otherwise instructed, always take one or two hot baths weekly, using soap freely, for the sake of cleanliness.

REGIMEN No. 1.—For a Strong Man. Immediately upon arising take Physcultopathic Movements N, followed by a dry friction bath, after which take a cold bath.

Sometime during the day walk until thoroughly tired, being careful to give attention to deep breathing exercises during this walk.

At night before retiring take Physcultopathic Movements M.

REGIMEN No. 2.—For a Strong Woman. Immediately upon arising take Physcultopathic Movements M and K. Follow with a dry friction bath, after which take a cold bath adapted to your recuperative powers. Please note that this

cold bath may be a plunge into a bath tub of cold water, a shower bath, or it can consist merely in wetting the body all over with a wet cold towel. Dry the body thoroughly.

Sometime during the day take a long walk, giving careful attention to the necessity for deep abdominal breathing, the practice of which is impossible when a tight corset is worn.

REGIMEN No. 3.—For a Man of Average Strength. Immediately upon waking in the morning take Physcultopathic Movements J, followed by a dry friction bath.

Sometime during the day take a long walk, being careful to breathe fully and completely during this walk.

At night before retiring take Physcultopathic Movements L, followed by a cold bath secured by simply dashing cold water over the body, or rubbing the body thoroughly with a cold wet towel.

REGIMEN No. 4.—For a Woman of Average Strength. Immediately upon waking take Physcultopathic Movements K, followed by a dry friction bath.

Sometime during day take a long walk, breathing deeply and fully at frequent intervals.

Before retiring at night take Physcultopathic Treatment G, if convenient; otherwise, substitute Physcultopathic Movements L. If the movements are too vigorous for you they can be merely attempted.

REGIMEN No. 5.—For Weak Patients, Men or Women, Not Confined to Bed, With Pulse and Temperature Normal. Immediately upon waking in the morning take several deep inhalations, drawing in as much air as you can. Follow this by Physcultopathic Movements I. These should be followed by a dry friction bath, taken with a bath towel or brushes. If the patient has sufficient strength it is always preferable to apply this friction bath himself, as the exercise is beneficial.

Sometime during the day walk until slightly fatigued, being careful to give attention to deep breathing.

At night before retiring take the same exercise as in the morning.

Now suppose that in the case of this weak patient, for which the above prescription was suggested, instead of having a normal pulse and normal temperature, the pulse is low and inclined to be weak, and the temperature is low or slightly subnormal. Under such circumstances *Physcultopathic Movements H* should be used in the morning, instead of *I*. Sometime during the day, or upon retiring at night, a hot spinal pack should be given. If this pack is given upon retiring it can be allowed to remain until morning, or until the patient awakes. As a rule the patient will immediately go to sleep after a treatment of this kind.

Now let us take another variation in this case. Suppose you find the pulse high, although the temperature is normal. As a rule when you find a high pulse the temperature is also high. When the pulse is unusually high, exercise of any kind must be given with the greatest possible care. Exercise might be used even in this instance, though when there is the slightest discomfort from the increased beating of the heart induced by exercise, it should cease immediately. It might be necessary to confine the efforts in the way of exercise to deep breathing and a little walking. If there is the slightest feeling of chilliness or discomfort because of feeling cold, a hot abdominal pack should be given.

Now let us suppose the pulse is high and the temperature is also high. In that case the same general regimen could be followed, with the single exception that the abdominal pack suggested could be cold instead of hot.

If the pulse is high and the temperature low it indicates a devitalized condition which necessitates the most careful treatment. Neither cold water nor cold packs should be used on a patient in this condition under any circumstances.

In addition to the above regimen, including deep breathing, and *Physcultopathic Movements H*, it would be advisable here to use hot spinal packs sometime during the day, and a hot abdominal pack upon retiring at night.

REGIMEN NO. 6.—For a Weak Patient Confined to Bed with Pulse and Temperature Normal. I would suggest early in

the morning Physcultopathic Treatment C, followed by sponging off the body with moderately cold water, drying hurriedly, including a certain amount of dry friction after the skin is dried. Sometime during the afternoon I would suggest Physcultopathic Treatment D.

In instances where the pulse is low and the temperature is low, in addition to the treatment suggested I would prescribe a hot sitz bath to be taken before retiring, the patient to remain in this bath ten or fifteen minutes, or until thoroughly warm. The bath should be as hot as the patient can bear it. Please note, however, that as a rule Physcultopathic Treatment D will usually influence the return to normal temperature and normal pulsation.

If the pulse should be high and the temperature low, about the same regimen would be prescribed, though the treatments should not be made quite so vigorous. Also, the patient should be watched carefully while in the sitz bath, and at the first feeling of discomfort should be immediately removed. Sometimes a hot bath of this kind will tax the heart considerably.

If the pulse is high and the temperature normal, the same general regimen can be followed, though instead of a hot sitz bath, a cold abdominal pack is suggested to be taken on retiring at night. Should there not be a very rapid recuperation with a feeling of warmth from this pack, hot water bottles should be placed at the feet.

When the pulse is high and the temperature high I would advise Physcultopathic Treatment B, beginning early in the morning, and a cold sitz bath to be given in the afternoon, followed immediately by Physcultopathic Treatment D. When the patient is apparently too weak to take a sitz bath, a cold hip pack could be given instead, though the sitz bath would be far better, when it can be taken.

REGIMEN No. 7—For Patient Very Weak, Confined to Bed; Possibility of Death Clearly Apparent.—Let me again reiterate the absolute necessity in cases of this kind of the largest possible quantity of pure air for the patient. What-

ever you do, avoid the deadly mistake of trying to maintain the warmth of the patient by heating the air in a closed room. The room should be open as much as possible to the outdoor air, and the warmth of the patient should be maintained if necessary by covers, hot water bottles and other means, but never, regardless of the nature of the disease, must one try to maintain the warmth of the patient by heating the air in a closed room.

At this particular stage of a disease the greatest possible care must be used to avoid too much treatment. Every treatment given must be productive of a distinct recuperation; in other words, it must be seen clearly that the patient feels better and stronger because of the treatment, almost immediately thereafter. There should be at least a slight improvement in the temperature and the pulse beat, or else in the feelings of the patient to indicate this improvement.

The two most valuable remedies at this stage of weakness will be found in the hot spinal pack and in the hot abdominal pack. The hot spinal pack stimulates the activity of the nerve centers, and it is from the nerves that come all the energies which are essential to maintain the activity of the vital organs. Therefore, the application of hot spinal packs should be used freely. And in most cases it is indicated whether the temperature is high or low, for in stimulating the nerve centers of the spine to perform their particular duties, with greater vigor, if the temperature is high, naturally the inclination would be to bring it lower; or if it is low, to raise it. In any case it would be brought nearer to the normal. In certain conditions of disease a high temperature is needed for the stimulation of metabolism or tissue changes, with a view of arousing greater activity in the elimination of effete and poisonous matter from the body. Therefore, do not be afraid of fever. Of course, if the fever should rise to 104 or 106 degrees then there is always danger, and in that case it is advisable to reduce it at least one or two degrees; but a fever of 100 or 102 should not necessarily cause alarm.

